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ABSTRACT

A compilation of "think papers" designed to identify data needs for policy-making related to allied health professions schools, this report is directed toward policy-makers and scholars involved in allied health professions education. The papers were solicited from selected representatives among allied health educators, state and national health planners, and government officials. Issues covered are: manpower supply and distribution; training programs, supply, quality, and articulation; professional identity and recognition; career opportunities and advancement; financing of educational programs; licensing and certification; and role in health care team. Specific papers and authors included are: "Data Needs for Health Manpower Planning," by David Hoover; "A Review of Allied Health," by Darrel J. Mase; "Towards the Restructuring of Allied Health Education," by Jerry N. Patterson; "Information Needs for Allied Health Policy," by Larrie J. Dean; and "The Development of Policy for Allied Health Schools," by Robert E. Tumelty. The intent is to raise critical issues about the current status of allied health professions and thus identify data and research needs for these professions. (LBH)

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Data Needs for Policy Making Related to Allied Health Professions Schools

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The American Society of Allied Health Professions (ASAHP) is a national educational association dedicated to the broad concerns of nearly three million Americans working in a wide range of health occupations known collectively as "allied health." Represented in this grouping are professionals from over 150 distinct specialties whose preparation ranges from post-high school to post-graduate school.

Our Membership consists of allied health educators, professional association administrators, and health practitioners who gather each year to discuss mutual concerns involving legislation, health manpower, continuing education, rural health care, minority barriers in health professions and much more.

DATA NEEDS FOR POLICY MAKING RELATED TO ALLIED HEALTH PROFESSIONS SCHOOLS

EDITED BY:
PHILIP W. ANDERSON
AYRES D'COSTA

AMERICAN SOCIETY OF ALLIED HEALTH
PROFESSIONS
ONE DUPONT CIRCLE
WASHINGTON, D.C.
MARCH, 1977

DATA NEEDS FOR POLICY MAKING RELATED TO ALLIED HEALTH PROFESSIONS SCHOOLS

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Introduction

This document is a compilation of "think papers," solicited by the American Society of Allied Health Professions (ASAHP), designed to identify data needs for policy-making related to allied health professions schools. Although presented as a report to the Bureau of Health Manpower, Department of Health, Education and Welfare as part of a final report on Contract N01-MI-24316, this document is directed toward policy-makers and scholars involved in allied health professions education.

The "think papers" were solicited from selected representatives among allied health educators, state and national health planners, and governmental officials. Each author was presented with a list of nationally-recognized priority issues in allied health and requested to address some of these and other issues from his own professional perspective. The issues presented to the authors were:

- Manpower supply and distribution;
- Training programs, supply, quality, and articulation;
- Professional identity and recognition;
- Career opportunities and advancement;
- Financing of educational programs;
- Licensing and certification, and;
- Role in health care team.

The papers included in this document have attempted to discuss these issues in ways that raise critical questions about the current status of allied

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health professions and thus identify data and research needs for these professions. Hopefully, these papers will serve to stimulate professional analysis of the major issues in allied health education and thereby contribute to the development of needed policy and practices.

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DATA NEEDS FOR HEALTH MANPOWER PLANNING

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This paper was prepared with the advice and assistance of L. M. Detmer and Joanne Masuret. The authors are indebted to them for many of the ideas and concepts expressed herein.

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Introduction

The purpose of this paper is to provide health planners with a method of approaching health manpower issues, to recount briefly the capabilities and limitations of health manpower planning as it is currently practiced and, thereby, to point to some of the data needs of health policy makers. Implicit is the recognition that allied health manpower planning issues and data needs would follow from the more general discussions in this paper.

There are two principal types of manpower planning which are done: long-range planning to improve the efficiency of the health manpower "system", and short-range planning to overcome specific manpower constraints that are identified as we try to provide a health service. What *can* be accomplished through health manpower planning is often obvious. What cannot is often not so clear, nor is the price that usually must be paid in order to overcome manpower constraints on the delivery of health services. This price may be immediate and apparent, or long-deferred and not apparent at all. It often is paid in terms of less flexibility to use available skills, and in higher manpower costs. The need to look closely at costs in all their forms is repeatedly emphasized because so often they seem to be ignored.

Although "manpower" people are the authors of the opinions expressed here, manpower planning is seen as a derivative of health services planning. With certain exceptions, which are noted, this paper is based on the assumption that, if health services problems do not exist, then health manpower does not warrant the expensive attention that a thorough planning process requires.

In attempting to identify "model approaches" to health manpower planning, a HRA study conducted by Abt Associates (1974) found that state-level planning was "fragmented and compartmentalized" resulting in a "series of reactive, ad hoc, isolated events rather than as a system of prospective, ongoing, integrated processes." This was attributed to a lack of both a well developed understanding of the process of plan development and a "systems" approach to identifying manpower goals and objectives. An example is concentration on planning for health professions education at the State level, which commonly does not adequately address the broad health service goals that must be considered by manpower planners. Further problems that were identified included the inability to coordinate inputs from important participants (other organizations, budgetary authorities, etc.), misdirection of data collection activities, and lack of authority to assure implementation of plans.

The reasons for this state of affairs are clear. Prior to passage of P.L. 93-641, the Health Planning and Resources Development Act, most organizations with responsibility for general manpower planning had insufficient authority. Coordination or even the influencing of the many organizations with some manpower authority has been extremely difficult. Little money has been available for health manpower planning, and techniques have not been adequate. P.L. 93-641 should provide a welcome impetus for improvement.

Manpower Issues and Goals

Health manpower analysis and planning customarily is accompanied by a great deal of argument. Part of this stems from the complexity of the subject, and part from the diversity of points of view of health manpower that are held by the various participators in planning. Some of this divergency in views is caused by concern with one or another of the manpower goals (discussed below) to the exclusion or even at the expense of other goals. In other cases, it may reflect preoccupation with one particular occupation or with some segment of the health system. Sometimes, it arises from the different emphases given to the "approaches" to or uses of manpower planning, which are treated later in this paper.

Currently, well recognized health manpower goals include: (1) supply, or numbers, (2) distribution, or the location of workers, (3) quality, or the competence of workers, (4) educational efficiency and effectiveness, (5) costs of manpower utilization, and (6) social concerns about health manpower as people. These health manpower "goals" need close examination by planners. Except for the last, they derive from health services problems: one need not be concerned about a manpower shortage, no matter what the ratios say, if the health service in question is freely available. While this seems obvious, health planners encounter many who think that manpower is an end rather than a means.

Supply

The simplest type of health manpower planning is concerned with whether or not sufficient numbers of some particular type of health manpower are (or will be) available to provide necessary services.

To call attention to the fact that health manpower inputs to the work-force should be adjusted to the actual demand for individuals to fill jobs, and not to some ideal and unrealizable level of employment, the manpower supply goal is usually stated as: *"ensure an adequate supply of health manpower, commensurate with effective economic demand"*.

In the literature, the supply of health manpower has been evaluated with respect to a number of different requirements criteria:

- *Calculations of the amount of a certain type of health services that* ***should be*** *provided (and consumed) in order to achieve some health goals.*
- *Expert opinion about the number of practitioners that could be required if all consumers reached some level of "optimal utilization".*
- *Calculations of the number of practitioners required in order to provide, in various geographic sub-regions, a manpower supply presently enjoyed by a few regions.*
- *Estimates of the number of practitioners required to equalize access time for all consumers.*
- *For salaried personnel, current employment plus budgeted vacancies.*

- *For independent practitioners, various estimates of economic demand as indicated by quering income, etc.*

The last two methods of obtaining manpower supply targets differ from the others in that they attempt to state not how many personnel it would be desirable to have, but how many can find employment (or in the case of the independent practitioner, how many individuals can share the economic base of practice without significant under-utilization).

Ideally, the supply of manpower in a health occupation should be equal to the "effective economic demand", which can be simply defined as the number of individuals that can be gainfully employed. However, the concept of "effective economic demand" is not truly applicable among all occupations. It has been determined that some independent practitioners "create their own demand". Their utilization will neither be consistent with nor totally influenced by calculated ecnonomic demands for service. Hence, in contrast to salaried personnel, independent practitioners require special methods of determining need.

For salaried personnel, the supply (excluding those who have reached retirement age) sometimes exceeds the number that can be gainfully employed. This excess includes those who are unemployed or under-employed, and those employed outside the occupation. This "inactivity" in the profession may be voluntary or involuntary. In many health occupations, the principal determinant of a shortage or surplus seems to be the response of this inactive work force to the overall economic situation. The various types of inactives will react differently to economic incentives to work in the occupation, but we know little about this. It is certainly dangerous to forecast shortages without taking the state of the general economy into account.

Assessment of current manpower supply and requirements is much easier than projecting a future situation. Projections for health systems areas (HSA) will generally be less valid than those for States, and projections for single communities even more difficult. For smaller areas, in and out-migration of health workers becomes less predictable, as does the state of the economy with its influences on employment. For some occupations, the supply of manpower within a State or HSA is fairly independent of other areas. For many occupations this is not so, either because of the geographic mobility of personnel or because training programs are located elsewhere.

For some types of health services (e.g., filling cavities in teeth) there is a direct relationship, easy to elucidate, between the volume of services needed, the number and types of manpower required, and the economic demand for manpower. In other cases, the services-manpower relationship is unclear. For example, we have only a rough idea of the types and volumes of health services that are necessary to improve nutritional status, and little knowledge of the types of manpower that should be used to provide these services, or of their productivity when working toward this goal. When an occupation provides a variety of services, for many of which there are no quantifiable estimates of need, the question of the adequacy of manpower supply also must be addressed without good information about total health services requirements.

If we state manpower targets in economic terms (e.g., satisfying the labor market demand for nurses), we are making an important assumption: that (in the absense of hard evidence to the contrary, at any rate) the market for health manpower reflects sufficient current information about what health services are needed, who should provide them, and how productive the individual health worker is. If this assumption is acceptable, economic analysis of a manpower issue is a powerful and convenient tool.

Distribution

If the general supply of health manpower is commensurate with economic demand, there may still be uneven distribution of manpower within an area or among institutions. Some communities or institutions will be unable to attract or retain enough personnel to provide needed services, while others experience an over-supply. This is manpower maldistribution, and the goal is *"to achieve a specialty, institutional, and geographic distribution that will promote equitable access to health services"*.

The close relationship between supply and distribution creates confusion in distinguishing between a true shortage and maldistribution. If there may be geographic maldistribution within the planning area, we must determine that it actually exists, in the sense that an optimal distribution of the same numbers of personnel would require geographic shifts in site of practice. Methodologies for determining optimal distribution of health professionals do not yet exist. Lacking these, we simply indicate within the planning region those geographic areas of most acute manpower shortage and those areas from which manpower might be drawn with least impact upon health services.

Of course, we can have maldistribution of manpower among large regions or States, yet each HSA might perceive only a shortage or surplus of personnel. The difference in perception might be unimportant, since for practical purposes, we have a "geographic maldistribution problem" only when there exists some possibility of redistribution of the available personnel. When a transfer of manpower is improbable, we really face a shortage in one area and a surplus in another, each calling for an independent solution. This is more often the case with vocationally-trained health workers than with higher-level and more mobile professionals.

Specialty maldistribution is a problem largely specific to physicians. For other occupations, either specialization has not proceeded very far, or we assume that the specialty "mix" is a valid response to health services demands.

Institutional maldistribution refers to the possibility that (say) short-term general hospitals may be over-utilizing certain types of manpower which are needed and would be better employed in long-term care facilities. However, most alleged examples of institutional *maldistribution of manpower are based on the assumption that the "system" will be more efficient if institutions modify their roles; if more diagnostic work were done on an out-patient basis, for example. In such cases, we do not, of course, have a maldistribution problem, or even a manpower problem, but a question of how to utilize health facilities.*

Geographic maldistribution is primarily a function of access time to health services, which should not be confused with simple distance. The time needed to reach and be seen by a source of primary care in a large city may equal or exceed the time needed in some rural areas designated as "underserved". Also, maldistribution should be examined from the point of view of access to a type of health service, nor merely to a dentist, physician, or other specific type of personnel. Some access problems no doubt can be solved in non-traditional ways, and all possible options in providing service deserve consideration.

Quality

Many manpower policies and programs are adopted in order to improve or control the "quality" of the health professional. As a manpower goal, this is best stated as: *"Ensuring adequate quality of the workforce".*

The concept of "quality" for individual health personnel can be simplified and equated with proficiency at work, and this simplification is necessary if we attempt to assess this dimension of the workforce and set quantitative standards for quality. (It is understood that the educator, in designing educational programs and evaluating students, will proceed from a concept of quality that goes far beyond this). This proficiency at work is centered on technical competence, and the measures of individual quality that are available to us -- certification, registration, licensure -- are all founded (if they are worth anything at all) on some assessment of the technical knowledge and skill that the individual has.

Within the manpower production system there are several points at which efforts toward improving workforce quality can be applied. Changes in student selection standards, accreditation guidelines, credentialing practices, or requirements for continuing education all have bearing on the quality of the workforce. Since measurement of quality is difficult to say the least, and since there are no absolute standards of quality to be applied, decisions to improve quality are not usually the result of formal planning. Generally, the planner's role is to assess the "side effects" of the various quality improvement activities that may be proposed. That is, if it is proposed to license a formerly unlicensed health occupation, he should attempt to predict the impact of licensure upon the size of the workforce, geographic mobility, recruitment from outside of the planning area and similar matters. It is the planner's responsibility to point out the cost of regulating the health workforce in the name of quality so that such proposals can be regarded as objectively as possible.

This problem of the quality of the individual health worker must not be confused with another aspect of quality, which is the ability of the health services system to provide good quality care as this may be reflected by the composition of the workforce. In the latter case, we are concerned with whether or not institutions are providing sufficient supervision and specialized services. An examination of staffing patterns -- the types and levels of occupations employed and their relative numbers -- may suggest that a problem exists. For example, analysis of institutional staffing patterns may show that there is apparently no provision for certain types of specialized services which patients obviously would require, thus suggesting that the quality of care in that institution is less than desirable and further suggesting that a manpower constraint may be responsible. Again, staffing pattern analysis may suggest that of two similar institutions, one relies too heavily upon lesser trained and presumably less qualified personnel. In such cases, it is tempting to develop and attempt to enforce minimal staffing patterns for various types of health care institutions. Within certain limits this process is sensible and constructive. However, increasing control over institutional use of manpower may decrease opportunities to minimize health care costs through more efficient use of manpower.

Educational Efficiency and Effectiveness

Another goal for health manpower planners is to: *increase the efficiency and effectiveness of education and training.*

For "basic occupational preparation", which is the training necessary to enter the health field, this goal leads us to ask the following questions:

- *What are the essential functions and responsibilities which graduates will have?*
- *How well does the training prepare them for this? (effectiveness)*
- *How well does the training prepare them for subsequent career development? (effectiveness)*
- *Is the training unnecessarily long or costly? (efficiency)*

Traditionally, questions of education have been left to educators and professional associations and the sometimes elaborate mechanisms set up to govern education. In the typical health occupation educational planning has until recently taken little notice of problems of manpower utilization, distribution, and costs. As health costs rise, including cost of providing the technical component of basic occupational preparation, more thorough planning for education and training is advocated.

The type of education planning that is done and the weight lent to decision making by the various interests involved depends on which of three situations exists:

- *Training for an established occupation with relatively fixed functions.*
- *Training for a relatively new or "emerging" occupation with functions which are still evolving.*
- *Training for experimentation in new roles and functions.*

In the first instance, of which nursing, physical therapy, and optometry are examples, there is little or no disagreement over how graduates are to be utilized: the major educational objectives are settled and well described. (Of course, content may vary to a degree from one educational program to another, depending upon the emphasis given to various aspects of professional competence). Established occupations typically have well-worked out policies and procedures for educational program accreditation, which leave individual educators or institutions with only limited freedom to experiment. Educational R & D concentrates on the efficiency of training, rather than its effectiveness which is seldom questioned seriously.

Established occupations are easier for the health manpower planner to deal with. The labor market is well defined, productivity is known, migration and attrition patterns are established (if only the data can be obtained to show what they are), and requirements are fairly well established. When health services changes are proposed it is relatively easy to calculate the numerical requirements for manpower. On the other hand, established occupations are resistant to changes in functions and responsibilities, which if significant must be acceptable to national accrediting and credentialing bodies. They have many long-established educational programs which are resistant to suggestions that they are no longer needed. They also have an established student demand which to a surprising extent is independent of the job market, and which in view of many is sufficient justification for providing educational opportunities.

"Emerging" occupations such as respiratory therapy are still developing their educational objectives, inasmuch as their functions in the health care system are not yet fixed. Educational program accreditation if it exists at all will be more lenient, especially with respect to content. Credentialing (licensure or certification of individuals) often does not require graduation from an accredited program. Labor market requirements for emerging occupations are uncertain, in contrast to established occupations which have had the opportunity to saturate the market and establish upper limits on manpower utilization which can be extrapolated to future times and situations. In planning for educational efficiency and effectiveness, emerging occupations require a light hand on the controls, so that development of roles and functions can continue.

Occasionally, individuals will be trained for a role which is not yet accepted among the health occupations. Recent examples include assistants to physicians in their many forms -- MEDEX, the child health associate, the orthopedic assistant, and others. Generally, this type of experimental training precedes any economic demand for graduates, and connot be "justified" through the techniques used to determine the need for educational programs for established occupations. Experimental training must continue to be encouraged, even though it does not seem to fit into any plan.

In health manpower planning, basic occupational preparation is examined and managed with a number of objectives in mind:

- *Minimizing consumption of health resources by education and training.*

- *Minimizing consumption of educational resources.*
- *Efficient allocation of available resources among health occupations.*
- *Meeting labor market demands for graduates.*
- *Changing the geographic distribution of graduates (through selection of potential students exhibiting certain characteristics, through specification of training site, and through modifying curriculum content and emphasis).*
- *Changing the specialty distribution and/or clinical preferences of graduates (through similar mechanisms).*

These, of course, are in addition to the well-known educational objectives of:

- *Adequate preparation of students for entry into an occupational field.*
- *Preparation of students for subsequent career development.*
- *Provision to students of occupationally-unrelated competencies.*

Educational institutions may also stress additional objectives which manpower planners must take into account:

- *Accommodate, within the limits of the institutional role and resources, student preferences for education and training.*
- *Maximize accessibility to education.*

Simply setting down these objectives (and this list is neither detailed nor exhaustive) emphasizes the conflicts that can arise in their pursuit.

Some are traditional objectives of vocational training but not higher education.

Vocational training, whether conducted on the job or in a training institution, has traditionally been employer-oriented, which is to say designed to meet requirements for manpower utilization. It has also always been cost-concious. Higher education, with its more diffuse goals and greater concern with intellectual development, has never been particularly responsive to manpower utilization problems. Educational opportunities are provided in law, architecture, foreign languages, journalism, or medicine with little attention to labor market fluctuations other than as they may be reflected by changing student demand. The objectives of higher education are not focussed on entry-level competency -- on proficiency in any particular job. Colleges and universities, therefore, tend to resist pressures to regard their programs as merely providing "inputs" to a workforce.

However, cost-consciousness in the health industry has threatened or destroyed the insularity of institutions of higher education from the hurly-burly of the market place, where health occupations education is concerned. Also contributing to this disturbance has been the entry on a massive scale of colleges, especially junior colleges, into vocational training. In an effort to accommodate the flood of students during the sixties (who, after all, had to major in something, and preferably something useful), colleges sponsored many programs which were and are essentially vocational training, if we ignore the vocationallyunrelated year or so of academic work which is required for a degree and which colleges have added to existing training programs when they have taken them over. They have thus exposed themselves (willingly, in many cases) to management by industry and by the health industry in particular.

In planning for health manpower education, we need to ascertain the extent to which the occupation in question should be regarded as "vocationally trained" as opposed to "educated". Programs with the characteristics of higher education -- much theory and little practice, orientation to a body of knowledge rather than a function, preparation of individuals for a variety of roles -- must not be viewed as exclusively meeting present or projected market demands for graduates.

The objectives above distinquish between conserving or allocating health resources and educational resources -- a subtle distinction, sometimes. It may be important, however, in finding grounds for the continuation of educational programs for which, although local employment prospects are slight, there is a high student demand and little drain upon health resources.

Some of the educational management objectives are more susceptible to planning than others. The cost objectives, in particular, are difficult to pursue because costs are not well elucidated. Cost-cutting can be either difficult or result in unanticipated ill effects upon the quality of training and even upon patient care in the setting in which clinical training takes place. In addition, the constant pressures for better preparation of health workers and better response to individual student needs for instruction tend to increase educational costs.

Considerable work has been done, principally in medical education, on the problem of obtaining better geographic and specialty distribution of health workers through student selection, curriculum change, and changes in the location or setting of clinical training. Except in special situations such as created by the MEDEX programs, there is as yet no convincing evidence that distribution problems can be overcome in this manner, although there have been some short-run successes. Further trials of these hypotheses are needed and will no doubt be forthcoming if educators and planners are left with sufficient flexibility to experiment.

Costs of Manpower Utilization

It is obvious that health planners must be increasingly cost-conscious, and that policies and programs must be reviewed with an eye to their long-range as well as short-range effects upon the cost of health care. A health manpower goal is, therefore: *"to minimize the costs of the manpower component of health care"*.

Efforts along this line may be direct or, more often, indirect. We can:

- *Experiment with and adopt manpower utilization practices that reduce the unit cost of health services.*
- *Estimate the impact of any proposed manpower policy or procedure on the cost of health services, and take this impact into account in recommending a course of action.*

In the first instance, the manpower specialist is working actively to reduce costs. In the second, he is merely exhibiting cost-consciousness in a decision situation.

Among the costs that must be weighed in considering manpower policies and procedures are:

- *Costs, in non-productive time, of providing specialized services in situations where the necessary specialized personnel cannot be fully utilized.*
- *Costs of substituting specialists for generalists.*
- *Costs of utilizing highly trained personnel for tasks that can be performed by lower cost manpower.*
- *Delays in referral and consultation due to insufficient access to specialists.*

Experimentation with manpower utilization typically takes place at the institutional level. It is limited by many constraints on how personnel may be employed, including not only State practice acts, accreditation requirements, and Medicare regulations (to name some examples of formal requirements for manpower), but also by convention, professional resistance, inter-disciplinary quarrels, and the risk of "malpractice". Agreements between labor and management are not yet sufficiently common or explicit in the health industry to prohibit flexibility in the use of personnel, but we can expect this to change in the future. As institutions find less freedom for experimentation with staff, opportunities to effect cost-savings will decrease.

Federal health care systems, and to a lesser extent State systems, are less constrained in the use of personnel than are private institutions. Some of the most productive work in reducing manpower costs through more efficient use of staff has taken place in military hospitals. The Navy, for example, was able to substantially reduce the numbers of health-related specialties after an analysis of tasks performed. Large health maintenance organizations have also provided good examples of how the time of high-paid professionals can be conserved with no loss of quality of service. This work may be triggered by a shortage of high-level professionals, technological change, new perceptions of health and the need for services, a changing patient population, or simply a desire to reduce manpower costs. Whatever the reason, cost-containment can be a result.

The development of the "mid-level" health worker -- the physician's assistant, nurse-practitioner, child health associate, etc. -- has received considerable attention. It illustrates a number of points about this type of experimentation which are significant in a consideration of how health planning agencies hould stand in relation to it. One of these is that concepts of medical supervision are subject to change. In addition to direct personnel supervision, we now see:

- *Prospective need supervision -- development of clinical algorithms and other protocols for addressing commonly encountered clinical problems. Approved in advance by physicians, these permit non-physicians such as nurses and PA's to provide equivalent service of high quality.*
- *"On-line" medical supervision -- Essentially, supervision from*

promptly accessible physicians when the over-the-shoulder physical presence of the physician is not required. Advances in communications technology make it increasingly feasible to provide "on-line" supervision, and give greater access to other physicians for ready consultation as well.

- *Retrospective supervision -- Based on chart review by the supervising physician, for purposes of assessing the "supervisee's" quality of problem identification, management, and consult patterns. This identifies those areas where continuing education or a change in work patterns would be beneficial.*

These changing parameters of medical supervision will allow improvements in the economy and quality of health service delivery, in as much as linkages can be developed from centers of clinical quality to inner-city and rural clinics, and non-physician mid-level health workers can be utilized in "remote" sites.

The mid-level health workers concept also has substantial potential in addressing the utilization patterns of dentists, surgeons, pathologists, radiologists, and anesthesiologists -- all individuals who require substantial capital resources to support their lengthy educational preparation and their practices. The ultimate object is to contain the costs of health care.

Social Concerns -- Manpower as People

In planning, we must not overlook the fact that health manpower is more than simply another resource such as facilities or equipment with which to provide health services. The interests of the four and one-half million individuals who comprise the workforce cannot be ignored, nor can the probable impact upon progress toward larger social goals of health manpower policies and practices. Manpower planners must, therefore, recognize and work toward objectives that do not have their origins within "health".

Concisely stated, this additional goal is to: ***maximize educational and*** *employment opportunities in the health industry, especially for minorities and the disadvantaged.*

Among the objectives included in this goal are:

- *Informed and intelligent career choice by students entering the health field.*
- *Equitable access to education and training.*
- *Adequate representation of minority groups among health professions students.*
- *Assurance that all students will be able to obtain necessary clinical or field training and experience.*
- *Recognition of knowledge and skill gained in non-traditional ways, with provision for advanced placement in educational programs, or for certification or licensure, through demonstrated proficiency.*
- *Adequate opportunities for the career development of health personnel.*
- *Minimal regulation of manpower consistent with meeting health services requirements.*

All too often it is left to the manpower specialists to worry about achieving these objectives. Except for concern with the interest of minorities, they tend to be relegated to the background, while the interests of consumers and of professional groups claim all our attention.

Manpower planners must always remember that they are planning for people not money or objects. Issues arise which may have a profound effect on people who have no representation and who may not even be aware that anything is at stake. A prominent current example is the diminution of health career opportunities for individuals who do not enter college. If only formal, academic, traditional paths of entry to health professions are open, these and other unconventionally prepared people as well will be lost as a health manpower resource. The people most concerned have no spokesman; their interests must be kept in mind by manpower planners.

Remedies to manpower problems have to be examined to see if human factors will permit them to work and, if so, whether or not they result in fair and equitable treatment for the people involved. Some of the most persistent health services problems such as the provision of health service in unattractive locations are generated by, or resist solution because of, human factors.

For years intensive efforts have been made in many States to attract physicians to private practice in unattractive locations, generally with economic subsidies such as forgiveness of educational loans or the provision of physical facilities at little or no cost. None of these efforts can be considered to have been a success. In some cases a more sophisticated approach to the problem has built in social and professional as well as economic incentives. This gives better results, although at relatively high cost. These efforts would have benefited from some prior system after study of the problem by behavioralists.

The area of continuing education of health professionals is another which needs analysis by behavioralists. Professional competency can be encouraged through programs of continuing education or by periodic re-examination. For occupations which include many informal specializations the disadvantages of periodic examination on some core of subject matter are immediately apparent. However, this is being seriously considered because voluntary programs (in which the individual is free to choose the subject matter or functions in which he will retain or increase his proficiency) have failed to do the job. Individuals who most need continuing education seem the least motivated to obtain it. Unfortunately, we have not so far undertaken to find out if a voluntary system can be effective and, if so, under what conditions.

Health System Deficits With Manpower Implications

The six manpower goals previously described are long-term, overriding concerns. There are also specific deficits in the health system which require a relatively short-term manpower response. Hence, manpower planners must sometimes use a highly focussed approach in solving a problem, and consider solutions with little regard to the six major manpower goals. Naturally, manpower planning that centers on specific health systems deficits is apt to bring the consequences of incremental planning -- the lack of a uniform strategy that can be assembled into a single state or national plan, and actions that retard progress toward long-range goals. Nevertheless, problems due to specific constraints must be attacked with the weapons at hand. Some of the more prominent problems are:

- *providing preventive health and consumer education services*
- *improving access to "primary care"*
- *improving access to health services in rural areas*
- *the assessment of quality in health care*

Prevention

Identifying the professional personnel that are required in order to provide preventative health services and consumer health education is a major problem. There is no definite economic demand for preventive services but merely a perception that preventing illness could save tremendous amounts of money. A National Conference on Preventive Medicine recently issued a report which includes strong statements on the need to establish prevention as a national priority. A major recommendation is the support of educational programs to develop the manpower essential to preventive health goals. The conference concluded that manpower requirements are acute, in the sense that if its recommendations for action were adopted the lack of appropriate manpower and training would prevent real progress in disease prevention.

Improved preventive health services will certainly require more individuals who are prepared as specialists in this area -- health educators, public health nurses and the like -- and additional training for primary care personnel, who must become more effective in providing preventive health services and in integrating them with the present disease-oriented health care system. These "requirements" for preventive services, manpower, and training are largely the perceptions of health professionals. However valid they may be, they do not constitute an economic demand, and provide no assurance that personnel will or should be motivated to obtain some training in this field. There is, of course, some economic demand for this manpower and training. Most of it originates with governmental public health programs. It is said that it will increase substantially, or at least that it should increase. However, experience suggests that a healthy skepticism is in order about when and to what extent this will occur.

The point for planners is that pressures to improve manpower resources in this area must be treated with some reserve, and a close look taken at what is economically viable. This applies especially to proposals to increase the numbers of health educators, community health aides, and others who are primarily employed with governmental funds or "soft money". The most constructive action to be taken in the absence of increased economic demand for preventive services specialists is the orientation of administrators and primary health care personnel to the value and methods of promoting and providing preventive services.

Primary Care

Primary care is generally held to include those health services which provide first contact with patients, the resolution of acute health problems (if only by referral to secondary sources), and patient monitoring or "oversight" to ensure continuity of care. Because of its importance and because of the difficulty that is encountered in providing oversight to many types of patient, primary care is receiving much attention and is a prominent theme in health planning.

Primary care, however, is a concept and not, at least not yet, a defined set of functions. Furthermore, it is apparent that whatever these functions are assumed to be, many health professions will be involved and no profession is likely to devote itself wholly to primary care. The planner or analyst who is asked to estimate the manpower requirements for "primary care" is, therefore, at loss to do so, except under rules of his own devising. There is no accepted approach to defining and quantifying the manpower which provides or is required for primary care in all of its ramifications. At this stage, each planning jurisdiction would have to develop its own definitions and conventions about which occupations to include, and what proportion of the effort of each occupation can be charged to primary care.

However, planners can address the manpower aspects of specific functions (or fairly-well defined sets of functions) which clearly are essential to the provision of primary care. The obvious place to start is, for medical care, with the "primary care physician" and his assistants. For dental care, the general practitioner and his assistants comprise the analagous primary care team. Primary care physicians include the family or general practitioner, the internist, the pediatrician, and the obstetrician. To these should be added the so-called "physician extenders" who assume some professional responsibilities: the assistant to the primary care physician and the nurse-practitioner, by whatever titles they may be known. Regardless of what other types of manpower may be considered necessary for primary care, this group plainly constitutes the essential resource. To further simplify, it can be assumed that to the extent that these types are providing patient care they are wholly engaged in primary care. A first task is assessing the primary care manpower situation is to examine access to these types of practitioners.

It may be argued that the physician cannot function without the support of a variety of other types, notably nurses, medical laboratory personnel, and radiographic personnel, and that these must be included in any analysis of primary care manpower. As a practical matter, however, questions of support personnel may never arise if the attempt is only to identify the _major_ manpower constraints on providing primary care. If access to primary care physicians and physician extenders is found to be inadequate, the basic primary care manpower problem is defined. Further investigation is, of course, necessary to determine the reasons and to suggest solutions. A solution may involve increasing the number of physicians, re-distributing them, increasing their productivity, or a combination of these.

If, on the other hand, access is found to be adequate, other problems may present themselves for solution as we work toward improving primary care. Patient habits and preferences for care may need to be changed.

Organizational changes may be indicated in order to better relate primary and secondary care and allow a continuum of patient supervision and planning. Some of these problems have manpower aspects, too.

"Primary care" problems are complex, involving much of "health care". They may have many causes, which may include manpower causes, but these are difficult and expensive to ascertain. Rather than attempt to fully explore the manpower aspects of primary care as part of a first attempt to discover what the problems are, the planner should be as precise as possible in identifying primary care service problems and the full range of potential solutions (including "non-manpower" solutions) before proposing manpower actions. Manpower "solutions" to these types of problems are usually expensive, take considerable time to put in place, and may prove not to be permanent.

Rural Health Services

Insufficient availability of health services in rural areas involves more than maldistribution and inadequate supply of health workers. Among the factors that influence the distribution, or rural supply, of manpower are the socio-cultural/and economic needs of health practitioners and their families. For example, medical and dental education occurs almost solely in major population centers in which both extensive teaching facilities and cultural resources exist. Furthermore, students admitted to these schools are predominantly from urban or suburban families. Leaving an urban environment to practice in a rural, sparsely populated area is seen as a sacrifice.

Improving rural health care is usually a matter of improving access to primary care, especially emergency services, and of providing good quality diagnostic services utilizing whenever necessary the full range of specialists and diagnostic aids. Either these services can be provided in the rural community itself, or they can be made more accessible although located elsewhere, as when a rural practitioner has special electronic communications with a distant medical center. In any case, the object is to provide rural patients with adequate health services, and not simply to decrease the distance to sources of services.

Most solutions involve training of health personnel, the introduction in the community of new types of personnel, or the relocation of practitioners. An object of many experiments has been to create a professional milieu that is less isolated, and to provide adequate coverage for the absent physician, in order to make rural practice more attractive. The measures taken for this also improve the quality of primary care and access to secondary health services.

The structural arrangement of HSA's provides for innovation in solving the problems faced by rural areas in obtaining better access to a wide variety of services. Simply by involving the community in the planning process, a greater awareness of the relevant health issues can evolve which may change a community's perception of need for health services and its willingness to pay for such services

Assessment of Quality

Manpower constraints limit our attempts to determine the quality of health care and to improve it. Programs, such as, Professional Standards Review Organization (P.S.R.O.), depend upon processes which document and evaluate the care given. These processes themselves require manpower with specialized skills and attributes which are in short supply.

Personnel are needed for:

- *documentation of health care--medical records administrators and assistants, transcriptionists, etc.*

- *manipulation of health care data--information processing specialists, systems analysts, etc.*

- *evaluation of health care--individuals, primarily with backgrounds in the various health professions, capable of setting quantitative and qualitative standards for care, through analysis and interpretation of current practice data as well as by other methods, and capable of evaluating institutions and procedures in a systematic manner.*

The dearth of individuals who are suited either to specializing in this work or to participating in it in conjunction with their clinical responsibilities may be the largest obstacle to health care quality assessment. The necessary skills are not well identified, the appropriate training for this work is questionable, and the volume of documentation and processing work needed to reach any particular level of quality assessment is in doubt at this time. It is difficult or impossible therefore, to draw conclusions about the feasibility or cost, from a manpower viewpoint, or health care quality assessment proposals.

Conflicting Objectives

Health manpower policies and programs are the result of compromise among various objectives that conflict to some degree. A proposal to increase the quality of the workforce through higher standards for licensure and certification will raise concerns about the results of such an action on the supply (will numbers be significantly reduced?), geographic distribution (will rural areas have a disproportionately large number of workers who cannot meet the new standards?), institutional distribution (will long-term care institutions lose staff?), costs (will salaries rise as a result?), and employment opportunities (what will happen to individuals who lose certification? Will the higher standards be a serious barrier to the disadvantaged?).

To these legitimate concerns about the long term effects of a new policy, we must add the inevitable differences of opinion that will arise about the validity of the proposed new policies and procedures. Will they have the intended effect upon the principal objective (in this case, a workforce of "higher quality"?). Problems of jurisdiction among competing organizations and professions will add to the disagreement on manpower policies.

A health planning agency must be in a position to give all points of view a hearing, and to distinguish between legitimate concerns for the health of the public or the welfare of health workers and mere expressions of self-interest. The advantages and disadvantages of manpower proposals must be carefully weighed, and a course of action selected that promises the most progress toward the stated objectives (increasing supply, increasing employment opportunities for the disadvantaged, or whatever) while not seriously impeding progress toward competing but equally important objectives.

Participants In Manpower Planning

Health manpower planning is not a neatly organized activity in which the responsibilities of various agencies are clear cut. As with the rest of health it is notable for a diffusion of authority, with the added complication of dealing with educational matters. Major foci of manpower planning include:

National:

- *The Public Health Service, which carries out national health manpower policies through programs, regulation, and the support of planning.*
- *The Office of Education, which oversees national planning for higher education and affects national policies.*
- *The Armed Forces and the Veteran's Administration which maintain semi-independent health care systems.*
- *Health professions educational accreditation organizations, which set and enforce educational standards.*
- *Health professions credentialing bodies, which set professional standards and grant recognition to qualified individuals.*
- *Associations of health professions schools, which sponsor educational changes and seek public support for their activities.*
- *Professional associations, which contribute to accreditation and credentialing, set "ethical standards", and provide or require continuing education.*
- *Associations of health care providers, which sponsor manpower analysis and research.*

State:

- *Licensing boards, which specify conditions for licensure and limitations of practice.*

- *Agencies for higher education, which budget State funds for training.*
- *Agencies for vocational training, which budget State and Federal funds for training.*
- *Professional associations.*
- *Associations of health care providers, which may develop employment policies.*
- *Educational consortia or systems of colleges and universities which initiate and operate educational programs.*
- *State-supported health agencies and health care systems, which utilize manpower.*

This list excludes health and manpower planning agencies *per se'*, whose major task clearly is to orchestrate these performers in such a manner that, at the least, they are not working at cross-purposes.

Overlapping Authorities

The spectrum of health manpower planning is wide and diffuse, ranging from degree education for the traditional health professions to training of technicians and aides in less than degree education, to issues of recruitment, retention, migration and employment.

These broad areas have received attention in a variety of Federal and State statutes, some of which apply only to health manpower and others of which are directed at all workers. This results in overlapping authorities which, because of different purposes and goals, can lead to opposing objectives. Federal initiatives for which there may be some areas of overlap in health manpower planning functions include:

- *Higher education planning (P.L. 92-318)*
- *Vocational and Technical education (P.L. 90-576)*
- *The Office of Management and Budget (Circular A-95)*
- *The Comprehensive Employment and Training Act (P.L. 93-203)*
- *The Health Planning and Resource Development Act (P.L. 93-641)*
- *The major health manpower training acts (P.L. 91-519, P.L. 92-157, Title VII of the PHS Act - (nurse training), etc.)*

The higher education amendments call for a State commission (section 1202) "to initiate and conduct a comprehensive program of planning" for occupational education programs. Under this program, planning shall include:

- *Assessment of existing capabilities and facilities plus determined needs.*
- *Consideration of effective utilization of all educational resources, including all public and private post-secondary institutions, skill centers, etc.*
- *Development of an administrative procedure to resolve differences between participants in the planning process.*
- *Development of continuous planning and evaluation procedures including data collection.*

The Act provides funds for conducting studies and surveys and for the preparation of recommendations regarding all public and private post-secondary resources in the State. In effect States are enabled to consolidate many State education administrative/planning bodies into a single commission. Not all States have designated a 1202 agency for higher education. However, most have some state-wide higher education planning body, either advisory or regulatory, which participated in various facets of planning. Health manpower is only one segment of concern to the higher education body. Objectives and priorities regarding _health_ education needs may assume less importance when they are viewed within the broader framework of all higher education. In some States these higher education planning bodies have developed a sophistication in education planning and have developed impressive data bases. Some give special attention to health manpower education.

Since the purpose of the higher education planning groups is to provide a coordinated and efficient educational system responsive to demands of students, they may recommend providing the training and education in health that is demanded by students, even though it is viewed as unimportant by health planners.

The Vocational Education Amendments of 1968 authorized Federal funds to States to "maintain, extend, and improve existing programs of vocational education, to develop new programs of vocational education, and to provide part-time employment...so that persons of all ages in all communities of the State...will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment..." Health occupations has been a defined area of interest within vocational education since the 1963 legislation. The 1968 amendments indicated that all vocational education programs should be designed so as to be available to all individuals who desire and need such education and training. The legislation requires a State plan for vocational education which includes both a long range program and an annual work plan. The State plan is called upon to give special consideration to educational agencies which serve an economically depressed area or areas with high rates of unemployement. It also calls for coordination with other public and private agencies concerned with manpower needs and job opportunities, as well as cooperative arrangements with public employment offices. A State agency is to administer the program, a governing board is established and there is extensive use of advisory committees at both the State levels and area wide levels. A review mechanism is established whereby individual projects and plans are reviewed against the State plan. The emphasis is on meeting the needs and interests of students who desire vocational training.

The Comprehensive Education and Training Act of 1973 placed special emphasis on the training and employment of unemployed or under-employed people. Statewide planning activities are required as are both a State agency to administer the program and a governing board, appointed by the Governor of the State. Since the CETA focuses on employment across all occupations it too has a mandate to engage in planning in the health manpower area.

Under Public Law 93-641, States and HSA's are charged with responsibility for planning for health services, manpower, and facilities --clearly a mandate to engage in health manpower planning. The legislation calls for both State and areawide agencies to conduct the planning and coordination responsibilities. Advisory councils and boards also have roles to play in health planning and thus they too become involved in health manpower issues. In addition, the HSA's have review and approval authority over the requests of others for certain Federal funds to be used within the health service area. It is clear that the HSA's must plan for the expenditure of health manpower training dollars as well as manpower planning in general.

Several years ago the Office of Management and Budget attempted to improve the exchange of information about applications for Federal dollars by issuing Circular A-95. This requires States to establish a clearinghouse, whereby certain kinds of applications for Federal funds must be submitted and circulated to other relevant groups and agencies for their review and comment. In the health manpower area the A-95 review requirements pertain mainly to construction requests. However, many new social service programs are being added to those requiring A-95 approval. Though this is not a planning function it does introduce an additional review function which occasionally may touch upon health manpower programs.

Special Considerations in Health Manpower Planning

Some considerations which can be thought of as technical constraints on planning may dictate the activities to be carried out. These considerations are: 1) Peculiarities of the various health occupations. 2) Geographical coverage. 3) Flexibility for innovative use of manpower. 4) Labor market characteristics. And, 5) Views of education.

Occupational Differences Affecting Planning

Each health occupation has peculiarities which affect manpower planning. It is not possible here to treat these at length or to discuss any one occupation in depth. It is useful, however, to note what these peculiarities may be, as a reminder that generalizing from one occupation to another is very difficult, and that an approach to solving the supply problem for dentists may not be valid for pharmacists.

In considering the needs for manpower, different occupations may require the assessment of the need for different types of services or functions. Needs may be most closely related to one of the following:

- *Patient care (determining the need for primary care physicians, optometrists, etc.)*
- *Administrative requirements (for medical records and information specialists)*
- *Governmental public service objectives (for air pollution control specialists, etc.)*
- *Research (for biomedical engineers, virologists, etc.)*

The potential utilization of manpower is sometimes limited by factors other than needs or economic demand, and this may be peculiar to an occupation:

- *Available supervision (physician assistants, physical therapy assistants)*
- *Available facilities (therapeutic radiation technologists, dialysis technicians)*
- *Referral practices (podiatry, many medical specialties)*

Providing the necessary access to health care may require some types of manpower in excess of actual service requirements. For example, small rural hospitals may employ but under-utilize medical laboratory technologists and other skilled technicians in order to provide services without delay when needed. Some occupations share functions, so that requirements for one depend in part on the supply of the other, as in the case of ophthalmology and optometry.

Some occupations have responsibilities that extend beyond the health care system, so that the supply/requirements relationship is difficult to establish, as for social work, psychology, and veterinary medicine. Informal specialization may make the determination of functions and hence requirements difficult for some occupations, of which respiratory therapy is an example. The economic feasibility of establishing a practice may not be determined solely by the economic demand for health services. The problem of maintenance of a small-town pharmacy where income is derived primarily from non-health sales is an example.

For some occupations, certification and/or licensure is well established and offers a means of fixing the supply and assuring some quality of the workforce (medicine, dentistry, nursing, physical therapy). For others, certification is voluntary and does not and perhaps should not cover the entire workforce (respiratory therapy, clinical laboratory assisting).

For some occupations, supply is not derived entirely from formal training programs; consequently additions to the workforce are more highly correlated with the health economy than with educational planning, and cannot be projected with certainty for future years. Such occupations include laboratory assistant, respiratory therapy technician, and electroencephalographic technician, among others.

For some occupations such as psychology, social work, and dietetics, the students in training will not necessarily function as health workers, and the expected total output of these programs cannot be taken as a measure of future input of health workers.

Geographical Jurisdictions For Problem-Solving

Obviously, some manpower problems are "local", in the sense that what is happening elsewhere has little bearing on the problem and its solution. For example, improvement of on-the-job training of hospital orderlies can be undertaken by a health systems agency or within one community with little or no reference to what others are doing in this regard. Equally obvious, a small area cannot take steps to increase the supply of physicians without reference to statewide, regional, and national events and trends.

Each manpower problem has its own natural geographic level of jurisdiction, depending upon how large the area is which can be treated as an independent manpower system. Occupations which are geographically mobile, which have few educational programs each serving a large region, and which are subject to a significant degree of national planning and control (such as strong professional credentialing or accreditation programs) pose problems which typically require regional if not national solutions. A manpower issue therefore, may be best addressed at the institutional, community, local (HSA), State, regional, or national level. It is the planner's responsibility to sort this out and at the least to think how his problem is viewed from a larger jurisdiction.

The production of small numbers of highly skilled individuals (e.g.; biomedical engineers, toxicologists, and extra-corporeal circulation specialists) must not be determined solely by the interest of communities where training programs happen to lie. A health manpower planner must always be alert to what his neighbors are doing, and the possible effects of their actions over him and his on theirs. Some problems will require joint action if any solution is to be found. In other cases an individual HSA may initiate a policy which works to the disadvantage of its neighbors. Consider, for example, the problem of overcoming a general shortage of registered nurses in two adjacent HSA's. Each could become independent of the other by electing to produce within its area sufficient nursing graduates to meet demand. But what if one HSA elects to solve its problems by recruitment, i.e., by encouraging in-migration of trained nurses? If this policy were successful, its neighbor presumably would bear a disproportionate burden of training, and might react by adopting policies designed to discourage migration of its nurses. Other protectionist reactions might follow. Uncoordinated manpower "solutions" which create new problems will rapidly lead to rigid, top-heavy, expensive and inefficient manpower management.

To avoid this, each planning area must see itself as part of larger systems, and visualize the consequences of its manpower policies over wider areas as well as over time. The most difficult impacts to foresee are those on costs. Discussions of manpower costs are unsatisfying, at least if the reader is looking for established relationships between various policies or programs and the cost of manpower utilization. There is no good guidance on what costs might be attached to a manpower strategy. Given our present state of knowledge of health manpower economics, the planner cannot be held responsible for seeing the cost-related consequences of an action in his own jurisdiction, let alone elsewhere. He should, however, take the responsibility of pointing out what these could be.

Most of the problems of how to relate to neighboring planning areas will arise because health manpower is geographically mobile. Perversely, health professionals often refuse to stay where they are trained, go where they are most needed, or remain where they are sent. Much of this mobility is not a response to purely occupational considerations. The movement of health professionals away from small towns and into population centers, for example, is part of a large-scale long-term geographic rearrangement of the population, and especially the professional population whether it be medicine, law, engineering, or whatever. Occupational considerations--working conditions, income, ancillary services, etc.-- will influence this movement in individual cases, but it is difficult to foresee that health manpower management, working with the tools available, could reverse this trend.

Mobility seems to vary with the general state of the national economy as well as responding to variations in local economies. Planning agencies must make allowance for this as it may affect their own and neighboring jurisdictions. This mobility and its variation over time make it difficult to project the supply of manpower available in small areas.

Plans of local jurisdictions must be reviewed to ensure that they solve, rather than create, State level problems. State plans should similarly be reviewed for impact upon the regional and national picture. These reviews must have considerable attention: uncoordinated planning could impede our progress toward health manpower goals. It follows that planners, if they are to be effective in orchestrating the activities of the many agencies and interests within their jurisdiction, must become familiar with national and regional manpower trends, policies, and research and development.They must know the positions of the many interested organizations or power groups, the current and prospective legislation that affects manpower requirements and utilization, and the workings of the systems that control manpower. Health manpower, in short, needs planners who rapidly acquire considerable knowledge of the field.

Flexibility In Training And Utilization

The training and utilization of health manpower is in a fluid state. In response to rapidly changing health technologies, new methods of organizing to provide health services, attempts to increase the standards and quality of service, and more concern with the social and environmental aspects of health care, there has been considerable change in the role and function of the established health occupations as well as introduction of many new occupations and specialties. The primary care physician's assistant, the expanded duty dental assistant, the nuclear medical technologist, and the respiratory therapist are examples. Specialized formal training can now be obtained for careers in health planning, hematology technology, emergency medical procedures, circulation technology, medical radiation dosimetry, and many other specialties unheard of a few years ago.

Technological advances lead to new formal or informal specializations. In most instances this is a positive step to promote quality of service and to conserve the time of other health professionals. However, specialization can result in "turf building" and development of a pseudo-professionalism, and may increase the cost of a service. It may also decrease the capability of a small institution to provide a full range of services, since creating a new specialist position and hiring an additional individual may be too high a price for some providers to pay. The proliferation of professional and specialty associations generally leads to more rigidity in manpower utilization. Some associations have developed apparently for the sole purpose of lending professional status to their members.

While there are grounds for concern that health manpower may become over-specialized, the addition of new occupations and specialties seems to have been, in the main, a rational response of the health manpower system to demands upon it. This response appears far from complete. Experience indicates that a considerable amount of flexibility should be preserved in health manpower development. In almost every case, the recognition and institutionalization of a new occupation, or of a new function for an established occupation, has followed the proof of its utility in practice. These developments, in other words, are the results of employer's and supervisor's attempts to use manpower efficiently and effectively while improving the access to and quality of services. A conclusion is that regulation of the utilization of manpower should not be so specific and circumscribed as to inhibit spontaneous or formal experimentation with better ways of utilizing existing personnel. "Basic occupational preparation" (training for entry into an occupation) must be considerate of future roles and functions that the graduates may be called upon to perform. The capability of educational institutions to anticipate future roles and functions, coupled with continuing education and specialized training for existing personnel, are important yet under-rated functions of the manpower system.

Labor Market Influences

Economic considerations have dictated the production and utilization of health manpower to a far greater extent than regulation, deliberate experimentation, and other expressions of manpower policy. Manpower planners seek to modify the "system" by, among other methods, removing or modifying those natural economic incentives that are regarded as counter-productive, and by introducing artificial incentives or disincentives to promote change. The most familiar examples of using economic incentives to achieve manpower objectives are found in Federal and State support of education and training, where considerable funds have been provided to expand training programs when it is thought a stimulus is needed. The practice of allowing physicians to bill for the services of a physician's assistant at the physicians' own rate is a more subtle form of economic intervention to reach an objective--in this case, wider acceptance of the P.A. as a provider of primary care.

In many situations the planner will not be considering economic incentives or disincentives as a method of achieving his immediate objective, but he must be aware of the economic aspects of his problems and of the likelihood that they will in large measure dictate events. This has been especially noticeable when analysts have attempted to project the "supply" of salaried health workers--which typically have been projections of the numbers of employed individuals in nursing and allied health occupations. This number is influenced to a far greater degree by the state of the economy in general than by "interventions". It has been well demonstrated that a recession is a very effective mechanism for returning to employment large numbers of trained health workers who would otherwise be inactive or employed in less recession-proof industries. Economic factors thus offer a means of effecting planned manpower change, but more often and more importantly, simply limit the ability to make change or inject uncertainty into the future course of manpower production and utilization.

Education's View Of Health Manpower

The disparity of views among those involved in the training and utilization of health manpower has been mentioned. One particular philosophic difference that leads to heated arguments over manpower policies needs more discussion. Health manpower can be seen merely as a resource that is necessary for the delivery of services. Too little manpower reduces services below the level of economic demand (which is usually itself below the level of professionally perceived need), results in manpower shortages, and triggers efforts to increase the supply. Training programs are encouraged to start up or expand.

Too much manpower can be seen as a problem, also. It leads to underutilization of skills and is evidence that training resources have been "wasted"--i.e., used to produce unnecessary manpower. There are strong arguments for adjusting the outputs of training programs so that the demand is met but not exceeded.

Educators, however, must have a different view of the situation. To a certain extent they are expected to provide that training opportunities that students demand. Responsible educational institutions will see to it that their students are provided with full information with which to make a career choice, and traditionally they have attempted to cater to that choice within the limit of their resources. Students wishing to major in fine arts, languages, nursing, or whatever other field they may choose have not been denied the opportunity solely on the grounds that it will be difficult to find employment. Government, for its part, has been content to offer supplementary financial assistance to health occupations training programs and their students when it felt that this encouragement was needed, and to withdraw it when a manpower shortage had eased. Recently, however, some health and education authorities have recommended that when a surplus develops in a health occupation that more definite steps be taken by governmental or quasi-governmental planning agencies to reduce the enrollment of or in some cases discontinue collegiate training programs. These proposals come at a time of saturation of some local or regional labor market for some health occupations, but also at a time of unprecedently high student demand for training for health careers.

The suggestions that government assume a new and more directive role in adjusting higher education to meet the realities of the labor market raises important issues and highlights some practical analytical problems. Our ability to predict the demand for any particular occupation in future years is questionable, especially when relatively volatile local labor markets are considered. The geographic dispersion of graduates of these programs to other areas where jobs may be found is poorly documented. The costs and benefits of an over-supply of health workers have not been weighed objectively.

Perpetuation of unneeded training programs consumes valuable health and educational resources, and attraction of students into overcrowded fields will do the majority of then a disservice. However, each case needs careful consideration of the extent to which it provides educational opportunity as well as contributing to the health manpower supply.

Conclusion

The "state of the art" in health manpower planning is not well developed. Despite the plethora of manpower modeling techniques, analytical approaches, assessment methodologies and resource allocation models, there are no standard manpower planning methodologies. Manpower planning as a discipline has insufficient attention in health service administration and health planning curriculums. This leads to a dearth of trained or experienced manpower planners. Much the same situation exists for individuals who are skilled in collecting, analyzing, and interpreting health manpower data. One result is to place a great burden on regional and national planning authorities to provide technical assistance to HSA staffs in the analysis of manpower data and the development of manpower planning strategies.

Not only are data generally inadequate, but manpower matters are often too complex to be fully understood. The five million health workers respond in diverse ways to many changes in the social and economic system, as well as the health system. While behavior of the workforce is not entirely unpredictable, it will continue to surprise the planner in minor and sometimes in major ways.

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A REVIEW OF ALLIED HEALTH

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Historical Resume

"Allied Health Personnel" --An Abstract Term

One hundred years ago, Benjamin Disraeli, the first Earl of Beaconsfield, said, "The health of the people is really the foundation upon which happiness and all their powers as a state depend." The statement is as accurate in 1977 as in 1877. How well are we succeeding in providing this "happiness" and these "powers" to our citizenry? What is the role of allied health in this charge? What are some guidelines and considerations for those working in or with allied health? How many allied health personnel are needed to do what and where? What is allied health?

Allied health is not a thing, it is a concept. It is an abstract term to describe those individuals, occupations and professions that are making definite contributions to the health and well-being of our citizenry. Allied health personnel are allied to medicine, to dentistry, and to other of the supportive personnel in the many allied health categories. There are a growing number of categories of personnel being included in the rubric of allied health who are not allied to medicine or dentistry, but who work independently or in non-medical settings. This is largely due to the breadth of the term health which encompasses maintaining health, environmental factors and related aspects.

Manpower (person-power) is another very abstract term as are democracy, rehabilitation, and mental health. If we wish to communicate in speech or writing on any of these concepts, we must define the aspect of the concept to which we are relating. When we refer to health manpower, we refer to an economical view of pooled energy. It refers to job analysis, reviewing current and changing patterns of the delivery of health care, as well as to occupational and professional responsibilities of allied health personnel. New knowledges and skills demand new applications by established allied health personnel and new categories of workers. Unfortunately, too often we establish a new category rather than to see if an established category can assume these new duties and responsibilities. It may well be time to phase out some categories of allied health workers and to combine others.

We need to give heed to the rising voices of dissatisfaction in this country over the issue of health care. The people's disenchantment seems to be in three areas: costs, access to health care, and quality of health care. There is good reason for these concerns. Health care costs have generated an array of regulatory measures such as certificates of need laws, utilization review, restrictive reimbursement formulas for third party payments, and PSRO's. Recently, estimates indicate that National Health expenditures in this country reached $118.4 billion in 1975, an increase of nearly 14 percent over the previous year. From 1955 to 1975, expenditures increased 584 percent. Utilization, which includes much more complex care and treatment than twenty years ago, has contributed to the rise, but prices have been the largest factor. Hospital charges are the largest part of the increase, and two-thirds of hospital expenditures is attributable to personnel costs. Health costs are rising far ahead of inflation, as hospital costs per patient day increased at the rate of 18 percent from 1974 to 1975.

To be sure there are portions of these costs about which we have no control, but there are other factors that can and should be controlled. As a society, we must decide just what portion of the Gross National Product can be assigned to health care costs. There is not a positive correlation between the amount of dollars poured into the health system and the improvement of health.

Yes, we are now investing eight to ten percent of the Gross National Product in health and this is expected to rise. However, this figure relates only to physicians and laboratory fees, hospitals and other health facilities, drugs, insurance, construction of health facilities, and the like. Why limit the estimates to professional costs? The television and radio industry feeds on health. Not just medical dramas, illness and surgical episodes, but the many commercial announcements. The food industry plays the role of surrogate or allied health source with millions of dollars for advertising to eat this and take that to improve health. So could one go on about allied health expenditures for environmental controls, sports-tennis, jogging, bicycling in the name of better health. The publishing industry seems to be kept alive by techniques for diets, improved mental health, cures for most ailments. We seem to live in danger of falling apart at any moment. Yet, we are, truly, a reasonably healthy people.

In the field of health care, allied health has generally come to be defined as relating to those in the health occupations and professions who are assisting in the care and treatment of individuals with diseases, disabilities and injuries. However, a 1970 governmental publication describes the breadth and scope of this subject. "The term 'allied health' manpower, when used broadly covers all those professional, technical, supportive workers in the field of patient care, public health and health research who engage in activities that support, or complement or supplement the professional functions of physicians, dentists, and registered nurses, as well as personnel engaged in organized and environmental health activities who are expected to have some expertise in environmental health" (U.S. Public Health Service, 1970). It can be seen that this definition can include orderlies, aides, janitors and a host of others whom many would not include. This indicates a basis for disagreement between various compilations of statistics relating to the need for allied health manpower.

If those in allied health are to communicate with legislatures, congressmen, consumers and providers, other health professionals and even one another, let us remember allied health is not a thing, it is a concept. It is a generalized idea about a class of objects. We must explain what part of the idea we are talking about. Whether we are relating to a ratio of fifteen allied health personnel to one physician or sixty to one will depend upon the categories included and the accuracy with which they can be counted. In 1975, it was estimated that the 2,500,000 active allied health practitioners comprise 65 percent of all the health personnel in the U.S. It is believed that figure would be 70 percent today. For this discussion, let us limit the term allied health manpower to those personnel who work in conjunction with or closely related to medicine and dentistry. Let us also limit the personnel to those who have had or will have academic preparation for at least six months to prepare them for the practice of their specialty. This will encompass over two hundred categories of individuals with a proliferation of titles and much overlaping of duties and responsibilities.

We must be ever mindful that there is nothing new about the concept of allied health, only the term is new. It came into usage with the passage of the Allied Health Profession's Personnel Training Act of 1966. Physicians have had assistants, aides, technicians, and nurses to whom they delegated many responsibilities. It was my privilege to assist in the establishment (1957) of the College of Health Related Professions in the J. Hillis Miller Health Center, University of Florida, Gainesville. The University of Pennsylvania had the first such academic structure with the School of Allied Medical Professions established in 1950. However, the School of Nursing at St. Louis University assumed the administrative responsibility for several allied health careers in 1929.

Development Of ASAHP

Ten years after the establishment of the College of Health Related Professions at the University of Florida, in March 1967, at a health manpower meeting in Washington, D.C., four deans of schools or colleges of established academic programs in allied health decided we should get together with others with such programs to share our experiences and frustrations. On April 27 and 28, the thirteen representatives from such colleges, schools and divisions in the United States had a meeting at Ohio State University.

At the close of the first day's meeting, it became apparent that there was a need for an organization. "Specific considerations for such action included the following needs: (1) for studies from the central office in respect to core curricula, faculty needs, new health careers, recruitment of students, and similar matters; (2) for an organization in which the members could share their experiences and knowledges with other colleges and universities which were establishing similar administrative structures; (3) for an association which could include those in junior colleges in order to pool our resources in our efforts to provide the needed health manpower; (4) to have an organization whose primary purpose would be interagency, interorganizational, interprofessional cooperation and coordination in efforts to provide the needed health manpower; (5) representation at various meetings related to health manpower; (6) representation on governmental councils and committees which relate to health manpower; (7) to speak as a body on various issues and causes which we had not been able to do; and (8) to be able to speak as a body in meetings with the Association of American Medical Colleges, American Medical Association, American Dental Association, American Public Health Association, and other associations" (Mase, 1968). We determined that we needed a voice to speak in behalf of patient needs and to work cooperatively with medicine and dentistry, the hospitals, and the many organizations, societies and professional groups which relate to the health care industry.

At a meeting at Temple University on August 29 and 30, 1967, the thirteen allied health representatives agreed upon incorporation papers, bylaws, and selected officers for the Association of Schools of Allied Health Professions (now the American Society of Allied Health Professions). We received a grant from the Kellogg Foundation which permitted us to lease an office in Washington D.C., and to employ an executive director and other staff. With much encouragement from many sources, the original thirteen decided in September of 1967 to have our first annual meeting in Miami Beach, just preceding Thanksgiving. To be sure, we had much for which to be thankful. At the close of this meeting, just eight months from our first meeting in Columbus, Ohio, we now had 450 individual members, 58 associate members, 18 institutional members, and 433 registrants attend this first annual meeting.

This rapid development has been reviewed briefly to indicate the great interest in allied health in the late 60's. In my presidential address, a ten point program was proposed. It was stressed that each allied health profession's business was "none of our business." It was indicated that we could assist the professions in "what they ought to do and how they are to be prepared to perform their duties." The second point observed that "the imperative development of health manpower which more and more shall be done by the junior colleges, demands the support and help of all of us" (Mase, 1967). It was explained that it had not been determined in our short experience what role the association could play and pointed out, "Our goals are common: to deliver the quality and quantity of allied health manpower necessary to provide the services needed in various health programs for all our citizenry." It was further proposed that we should help all of our members as well as those in the allied health professions with the changing patterns of delivery of health care, with teaching materials and general information. It was especially stressed that the Association could play an important role in needed legislation relating to the many allied health occupations and professions. Attention was called to the fact that terminology is one of our primary problems and unfortunately this still is a serious problem. It was pointed our that the structure of the Association after only a few months of existence must be immediately changed to meet the varied needs of the membership. While changes have been made on numerous occasions during this ten year period, the Association must be ever-changing in order to change with change.

The Future of Allied Health Schools

However, with the changing patterns of delivering health care, the future of many of our schools, colleges, and divisions of allied health is uncertain. The number of collegiate institutions offering allied health educational programs by 1974 was 3,953 with basic preparation in 1,428 institutions. Stimulated by what appeared to be an ever-continuing growing demand for a wide variety of allied health personnel and nurtured by federal support, we have indeed seen a very rapid and continuing growth in the number of programs and graduates. Now we are experiencing a shift in emphasis of specific areas of use and needs; less federal funds available and the projections of even fewer in the future; less support from private foundations who are also becoming disenchanted with the unnecessary duplication and proliferation of programs of education and training. Along with the concerns of much of society with the products of colleges and universities, allied health is discovering that this concept has not been around long enough to be as well established as many other academic programs. Needed financial support and even survival is being threatened in many academic settings. There is an oversupply of allied health personnel in many categories but a mal-distribution just as with medicine and dentistry.

Somehow we are not heeding the signals that apply to all of higher education. Young people are being warned away from going to college. A recent article reports on discouraging announcements appearing in the Chronicle of Higher Education (Washington Post, 1967) and of a new study which concludes that "the most outstanding students in college are the ones who are most likely to be unhappy ten years hence...unhappiness is the only thing the new test shows to be predictable on the measure of academic success." This article also reported that "Forbes" organization has determined that 44 percent of our 17-year-olds are looking forward to professional careers. That is about twice the number of existing professional and managerial jobs." Parents still want "grand things" for their children - a college degree and a career as a professional. The trouble is there will not be enough of these "grand things" to go around if we follow our present patterns of supply and utilization of allied health personnel.

New Roles for Allied Health Personnel

We chose to establish levels of preparation of personnel on the assumption that professional members of each group would give up some of their vested interests to the associate degree assistant and vocationally trained aide. Community colleges and technical-vocational schools have turned out this middle manpower, and continue to do so, as though the graduates were well utilized and that the limits of numbers needed should not be their concern. Projections of need indicate that unless health facilities, physicians, and dentists begin to utilize the present and anticipated productivity of allied health personnel, and especially middle manpower, we shall have a staggering over-supply. Unfortunately, those academic institutions preparing allied health personnel have never learned how to phase programs down and out as needed. They have only related to establishing new programs and trusting they would flourish. The staff of these programs depend on their survival and status by accepting more students, if at all possible, each year. Funds, which are more and more difficult to acquire, are distributed on the basis of head count rather than quality of the product.

Rising hospital and health care costs, immunization, changing patterns of anticipated need for allied health personnel in HMO's and group practive, are affecting the need for graduates. Adaptations and changes in numbers, locations and offering of programs in allied health schools are factors which need the attention of educators. Unfortunately, much of the funding of programs by federal agencies and state monies has aggravated the situation. There is pressure by the Congress, legislatures, and the many organizations established to distribute tax funds, to satisfy constituents. Community colleges were established only a relatively few years ago to provide educational opportunities for citizens near their homes. Colleges and universities became individual entities in competition with one another and, unfortunately, there was often an unnecessary duplication of allied health programs in many areas of study. Quality of the products have suffered since teaching staffs and clinical settings for trained allied health personnel were often not available. Utilization of the limited dollars available has suffered since most "good" programs could take more students than they can now accept. Cost of preparation of students in allied health have been higher that was necessary because of lack of staff, space and dollare to accept more students. There are no sound guidelines for universities, colleges and vocational schools to follow in respect to any projections of needs for graduates. There is little data regarding the most economical number of students in the program and to still maintain quality. This leaves the determination of programming to those with vested interests.

The leaders in academic programs are at the mercy of their constituents and have no guidelines to offset the pressure of local health facilities and personnel requesting a king or kinds of allied health personnel to be prepared for the labor market. How many physical therapist, physical therapy assistants, physical therapy aides are needed per 100,000 population? Should each of the nine state universities and twenty-eight community colleges in Florida be preparing personnel for each allied health specialty? Of course not. Then how many graduates per year are needed in each specialty and how many academic programs are needed to supply this number? Are state lines a reasonable division for the establishment of academic programs? Shouldn't there be more consortia both within and between states where those with good and extensive clinical facilities should take students from another program for clinical training? Should we not attempt to make some order out of the chaos before the earthquake strikes and crumbles allied health educational structures? Who should be responsible for these guidelines?

We see a change from institutional funding to more student funding of education. Perhaps students and parents should demand a better accounting of our educational health dollars. We thought it was necessary to get this extensive supply of allied health personnel because national health insurance legislation seemed to be inevitable. Now, with the economy in serious straits, we are beginning to question whether society can afford a national health plan as previously envisioned for delivering health care to all. With the rising cost of all health personnel, it is time to look carefully at the allied health worker productivity before increasing or maintaining the current number of graduates of educational programs.

We have seen a growing number of professions which only recently have began to be considered as a part of the family of allied health - speech pathologists, audiologists, social workers, clinical psychologists, and rehabilitation counselors. Ten years ago we found an increase of this type of personnel being employed in hospitals and other other health facilities. Can we expect this to continue when we are seeing a decline in the average daily census, hospital stay, and occupancy rates in hospitals? In many communities, because of increasing costs, hospitals are being pressured to cut back on their expenditures. What personnel will be the first to go?

We have moved toward further decentralization with the establishment of Health Service Areas within each state. Florida has eleven such areas which will tend to function as eleven "states" within the State. As each one becomes an entity unto itself, each one may also attempt to develop its own educational and training programs. This will add to the already unnecessary and undesirable proliferation of such units. This action may lead to further over-supply and lessening of demand for the products.

With the money crunch, we can expect to see an over-supply of certain categories of health workers as we have seen in the past few years in classroom teachers. Hospitals and other health facilities may turn to more middle manpower as they have turned to physicians from other countries. Many in allied health are overeducated for what they do. They should delegate certain duties and responsibilities to be performed by those whom we refer to as middle manpower. If this is not done, then we may expect health facilities to replace the allied health primary care person with the higher credentials. Not much longer will society permit those in the health professions to determine their own destinies.

While there is strength in unity in respect to divisions, schools, and colleges of allied health professions, such organizational structures may suffer as a result of the professional narrowness of their members. Each academic institution and each professional group sees the world from their own perspective and seeks to advance and extend this demand with little appreciation for the needs and abilities of others. Various departments of units within a health center or a medical center may find it difficult to agree upon common bodies of knowledge and to have common learning experiences. Core curricula for those preparing for careers in health have not become as well developed as was projected a decade ago. Yet, the need becomes greater for understanding and respect between those who are preparing to provide health care and well-being for our citizenry. If this army of health personnel are educated and receive clinical training together, they may then work together.

Basis for Need

New Competencies

The previous historical resume stressed the development, concerns and fears relating to the productivity, quality and utilization of allied health personnel. Let us now relate to some observations relative to needs of and for allied health personnel. The reader should be aware that there is often a great difference between projected needs and application for usage. We are experiencing an ever-growing knowledge explosion. Eighty percent of knowledge available today will be obsolete or proven incorrect in ten years. Allied Health students can no longer be taught how to practice their occupations and professions, but only enough to begin. They must be taught how and where to keep up in the practice of their specialty and that to do so, education must become a lifetime process. They must be taught that the practice of their specialty can be expected to change readically and may even be merged with another specialty or phased out.

Students need to be taught that we are in a thinking person's revolution. Perhaps we should consider this as evolution rather than revolution. Mindpower is our most valuable resource. The test and use of our education is whether we feel pleasure in the exercise of our minds. We have been told that we have 12 million brain cells. Even in 1977 this may be the most spectacular illustration of unemployment that we have or have had in society. Since we use our minds to only ten percent capacity, we should develop ways to expand this to twenty-five percent by the year 2000. Our minds are like parachutes, they only function when they are open.

We used to follow the dictum that men and women used their brains to store and retrieve information. Today we have computers to store and retrieve information for us. An individual who has been taught and is still being taught to stuff his head with facts, recipes, and this-is-how-you-do-it concepts is obsolete even before he gets his union card to practice his specialty. Much of what he or she can do or be taught to do, a machine can do or soon will be able to do better and cheaper.

The student in allied health must acquire the basic knowledges, skills, and capacities for independent action needed in the practice of his chosen profession. He must learn that his education and training will become a lifetime process in order to adapt and apply new knowledges and concepts. He also needs to learn that in order to be a happy and successful allied health professional, he should nurture and develop qualities for which there are probably not many courses. These include areas of learning which can never be programmed into a machine: inventiveness, flexibility, resourcefulness, curiosity, and above all, judgment. These traits are needed for the improvement of our environment and for the practive of each and every allied health category. If those in allied health develop and maintain these traits, there will be job opportunities. Allied health personnel will then be able to change with change.

There is a need for better utilization of the time of the primary specialist in each health category as well as for assistants and aides. Thorough time and motion studies would determine what professionals do and what duties and responsibilities could be performed more economically by middle manpower. These determinations should then provide guidelines for job classifications and descriptions and for curricula adjustments to meet these determined needs. Ongoing studies and projections into the future regarding health manpower needs should help the producer and the employer by providing the product from which they can get both high quality and productivity of services. To assist in the curriculum rigidity we now find in allied health, there must be a complete overhauling of accreditation, certification, registration and licensure.

The New Careers

New knowledges and skills demand many new allied health careers. Extension of health services in inner cities and rural areas will demand new approaches. If we do not have solid data in respect to how these services shall be provided, we may see a further prolifieration of categories of allied health workers. Much of this proliferation is due to the federal and private foundation sources who fund "innovative" approaches for the delivery of health care. Approval for a grant from a federal agency or a private foundation often requires new categories of health workers and new approaches to the delivery of health care. This pattern is generally followed only for the period for which the grant is funded. The same concept applies to much of our applied research. It is time to bring together the results of various studies in research, agree upon one or more concepts and procedures, and begin to market that product. How can this be accomplished? By providing funds for the application of the combined previous findings rather than to continue to support programs for "rediscovering the wheel." We now know much more about the delivery of health care in inner cities and rural areas than we have brought together for guidelines for the local communities and states as well as the federal government to feel secure in funding for general application.

We can expect that consideration will be given to the matter of prevention and well-being. New categories of allied health personnel or retreads of some in current categories will be forthcoming. While health maintenance is generally included on any list of medical duties, medicine has not assumed this responsibility and cannot be expected to do so. In an excellent article by Edmund D. Pelligrino, M.D. (1974), the author indicates that disease and health maintenance "are among the most neglected sectors of health care." He continues "were we to make effective use of this information on a wide scale, we could materially alter mortality, morbidity and disability." He adds, "Yet, we do not do so, and we are not likely to do so, without some major alteration in the organization of health care and the deployment of the specific functions of prevention by health professions other than physicians.

In this era of constantly rising medical costs, there is a move toward intensive care of patients at home rather than for hospitalization and nursing home care. Both physicians and patients are finding that though this idea is not new, there are benefits beyond costs. The National League for Nursing estimates, "that health workers made 2,640,000 home visits last year. Roughly 2,000 home care agencies are accredited for government programs, and more than 450 of the country's 6,000 hospitals now offer home care to their patients." The costs average $15 to $25 per day instead of the average hospital rate for a semiprivate room of $152 per day. Studies show an average saving of $1,000 per patient. "Home care benefits are available under Medicare, Medicaid, workmen's compensation and most Blue

Plans. Home care includes the regular services of a visiting nurse as well as physical, speech and occupational therapists " (U.S. News and World Report, 1976). Hospital beds, wheel chairs and home health aids are provided. While not all medical problems can be treated at home, experience shows that those who face long periods of hospitalization, such as those with heart diseases, stroke victims, orthopedic cases and cancer patients seem to respond well to home care. This development will indeed affect the numbers and kinds of allied health personnel needed.

Physicians think of themselves and are thought of as providing aid at the time of disability or illness. Prevention needs the attention and financial support that has been given to emergency services and primary care in the past few years. We may see this attention since PL 94-317-Title I - the National Consumer Health Information Health Promotion Act of 1976, was signed by the President on June 23, 1976. The bill provides for a national program of "health information, health promotion, preventive health services, and education in the appropriate use of health care." While the funds at the time ($31 million for three years) is most inadequate, the establishment of an office in HEW of Health Information and Health Promotion may well lead to additional funds and be the basis for attacking this need.

Should the types and numbers of allied health manpower needed be the determination of this office? Let us not continue to follow crooked paths in funding "innovative approaches" that do not get applied. Enough is known of what needs to be done to get under way in respect to the business of prevention and well-being. Let us agree upon the kinds and numbers of personnel needed, titles and health careers and the educational requirements, and alter our projections as we learn by experience. It is quite obvious that with the new types of services to be provided there will be new roles for existing allied health personnel as well as new careers. There could be other areas proposed where there will be need for new allied health manpower but let us move on to another consideration.

Supply

Inadequacy of Data Avaliable

Earlier observations related to concerns of over-supply in many categories of allied health personnel. Let us now consider alternatives for providing improved data projections regarding the supply and need. Allied health encompasses a wide variety of occupations and professions with varied regulations for practicing their specialty. While some are licensed in some states, few are licensed in all states. Some receive certification by their professional group or by a non-governmental agency indicating they have met certain pre-determined qualifications. Others are registered by a governmental or non-governmental agency. When we attempt to find out who is doing what and where, it is very difficult to get good base data.

The marketplace for allied health personnel is largely composed of women who enter and leave employment with marriage, children, and frequent moving. These factors make it very difficult to locate those in a state who are working or would like to work. The proliferation of titles, often not yet accepted by those directing health and treatment facilities, adds to the confusion in providing sound base data. There is no way to precisely determine what the needs for health manpower shall be in 1980. However, there are better ways than are being used in making these projections. We have turned to health systems analysts, health planners and others for assistance in our "guesstimates." In health planning, we should remember that planning without action is futile; but that action without planning is fatal.

Many studies were conducted and supported by the Regional Medical Programs and Comprehensive Health Programs during the short tenure of these governmental agencies. However, these and other studies were generally conducted in areas of a state and different techniques for collecting and compiling data were used. Now with de-centralization, we can expect to see further proliferation and questionable methods being applied to get the data needed.

Science magazine (February 1976) reports that Merlin K. DuVal, M.D., a former Assistant Secretary for Health in HEW, has aptly pointed out that during the past sixteen years, there have been at least eight full-scale reports by major organizations on the manpower problem. "That none of these reports...should have sufficed is, itself, testimony to the difficulties that are associated with accurately assessing the health manpower needs of the United States. Furthermore, that so many such efforts were undertaken at all is rather clear evidence that neither the medical profession nor the political leadership in the United States is entitled to any feeling of confidence that it knows what it is talking about in addressing this same problem today."

It is hoped that still another national study with a sound pattern of collecting health manpower data might be forthcoming and this would be clearly presented. Too much national, state and local data is still projected on a population ratio projection. Such a national study would have a common format for considering mobility of workers; full-time versus part-time; certified, accredited or licensed not practicing; common terminology for classification of personnel, and the like. The present expenditure of federal, state, and private funds to collect data on health manpower needs is tremendous. A better and more efficient system would release funds which could be used for providing health care services or meeting other needs of society. Let us remember that even good data only provides guidelines for decision-making by both those preparing and utilizing health manpower.

Is there a Manpower Shortage?

The reader may be familiar with recent predictions of a physician shortage. The prestigious Carnegie Council on Policy Studies for Higher Education has recently revised its earlier predictions that there is such a shortage. This study reports that the 55,000 physician shortage reported in 1970 has now been eliminated. The study concludes that only one in thirteen planned medical schools in the United States is necessary. This council also reports that there is little evidence of a shortage of dentists and it doesn't expect an influx of foreign graduates. The Council states, "the chief reason for new medical schools now is to achieve more adequate distribution of schools "(Moneysworth, 1973). At an estimated cost of one hundred million dollars for construction of a medical school and with an estimate by the Council of 477,000 doctors practicing in the United States by 1985 compared with 350,000 in 1973, evidence does not support the thesis that placing a medical school in or near inner cities and rural areas will assure a higher incidence of physicians practicing in such areas. The data for our actions, once again, seems to bear questioning.

Health professionals and those in educational institutions have provided most of the input regarding the need for more health personnel. It would seem that employers, consumers, citizen groups, and planners should work more closely with professionals in the momentous decisions regarding health manpower needs. To be sure, there is a mal-distribution of all health personnel. However, can we afford the luxury of flooding the market with health manpower where unnecessary services will be performed; graduates will become disenchanted and give up the practice for which they are prepared; and still will not move to the rural areas or inner cities? Would not economy and quality of health services both prosper by providing primary care with the assistance of physician assistants and nurse practitioners in the rural areas and by bringing those needing extensive health care to Health Centers. In this new world of the late 70's, we have found we cannot have a post office at every crossroad and hamlet. Neither should we try to have hospitals in settings where staff cannot be obtained and funds are not available to maintain a quality facility. If we are to apply the concept of "flooding the market" let us quickly move to the concept of the certificate-of-need for health personnel to practice in any community.

It is later than we think. It has already been stated that many manpower projections are indicating an over-supply of allied health manpower in many categories. The attrition rate of allied health personnel has changed. Many of the allied health categories have been primarily the province of women. In the past there were fewer women working; they were in and out of the labor market more frequently; larger families and short tenure. Today we have more men going into allied health. The Equal Rights Amendments together with inflation has moved many more women into other careers. More families with fewer or no children have also led to less attrition. These factors affect numbers of allied health personnel needed but this data is seldom factored into the projections for need.

Selection and Utilization

There is need for improved selection of candidates for allied health careers. Much has been written about the ladder-lattice concept. While students should have the privilege of moving to another area of study, more attention should be given to getting them into the proper category with their initial selection. The student selected to become a physician assistant with an Associate Degree from a community college should not have as his goal to become a physician. He should be selected with the goal that a physician assistant shall be his life's work. If later motivation and change in life goals moves him to go to medical school, that should be his privilege in the democracy in which we live. However, let us remember that we lose a physician assistant in the process. If this is the goal in the selection of the class, can we afford the luxury of this expensive educational pursuit with only two or three years of productivity? The same concept can be applied to physical therapists and physical therapy assistants; medical technologists, medical laborarory technicians and clinical laboratory assistants; and with all categories where there is more than one level in the allied health specialty.

Ever-rising health costs demand improved utilization of the time of allied health personnel. There is a danger of pricing ourselves out-of-the-market. As stated earlier, many academic programs require higher degrees than are necessary to perform the clinical duties of that specialty. This situation can only be justified if the primary care person in the specific allied health category retains only the duties and responsibilities which cannot be delegated to one with less expensive and extensive training in that same general category. The primary care allied health person must also be prepared to supervise and direct the activities of the middle-manpower persons in that category; they must become more managers-of-doers rather than the doers they have been in the past. This must apply especially to those with Ph.D.'s, such as clinical psychologists, speech pathologists and audiologists and other categories where middle-manpower has not been accepted by the profession as a whole. This concept also applies to those with bachelors and masters degrees who are not utilizing the middle manpower.

The projections of Garfield in 1970 are still relevant. He indicated only 20 percent of those who go to see physicians are sick, 30 percent are early sick, 30 percent are worried-well, and 20 percent are well. "Those interested in efficient utilization of personnel should attempt to find a way of having someone other than a physician screen patients, and separate the well from those who need to see a physician." He further noted this "suggests only that other physicians and other health personnel are performing tasks that could be done by people with less education, under the supervision of professionals." There are many new roles for those in allied health to perform with a redistribution of services and new centers for providing the needed programs for prevention and well-being. Dr. Garfield proposed a Health Care Center run primarily by allied health personnel with a minimum of necessary medical direction. In this Center, there would be health exhibits and health education: immunization, posture and exercises, psychosocial counseling and drug abuse, clinics for nutrition, clinics for adolescents, family planning, pre-natal and well-baby care. He futher suggested a Preventive Maintenance Service be staffed by allied health personnel with necessary medical supervision for such areas as obesity, diabetes, hypertension, arthritis, mental health, geriatrics and so forth. He also proposed a Health Testing and Referral Service largely staffed with allied health personnel working under medical supervision. The Sick Care Center would relate to the 20 percent of patients needing immediate medical attention.

Joiner and Blayney (1974), state, "the increased specialization and institutionalization of health services coupled with the emergence of new allied health professions requires a vastly different concept of manpower. Health manpower should be viewed as an input into a system. This system also utilizes other inputs; i.e., facilities, technology and financing. The level of health services will be dependent on the types of utilization obtained from the various inputs. Manpower utilization should be concerned with matching the capabilities of trained workers with tasks that need to be performed." Anne Sommers of Princeton was quoted in this article that, "a major barrier to manpower mobility and efficient utilization is the tradition of individualism that permeates the entire health services industry and seems to perpetuate outmoded rigidities and institutional restraints."

Institutional Cooperation

An excellent presentation relating to institutional linkage was presented at the Eighth Annual Meeting of the American Society of Allied Health Professions. The authors presented answers to questions regarding this concept as it had worked at "The Regional Technical Institute for Health Occupations (RTI), a division of the School of Community and Allied Health Resources (SCAHR) at the University of Alabama in Birmingham (UAB) and 23 two-year institutions in Alabama which have cooperatively developed a unique linkage for training health workers. The linkage is designed to eliminate unnecessary duplication of health programs in Alabama while it more adequately distributes trained health workers to health care facilities throughout the state. Linkage makes it possible for a student to attend a local junior college for one year of prerequisite and nontechnical course work, then transfer to the RTI for the second year of technical study and clinical experiences." (Blaney, Truelove and Hawkins, 1976). The graduate recieves an associate degree from the junior college and a certificate from the University of Alabama.

This is a pattern which should be viewed as most desirable. This institutional linkage avoids unnecessary duplication of programs, staff, facilities, and equipment. The program assures good clinical facilities for the students. As the need for allied health manpower fluctuates, a respective program can be cut back, staffed and started more easily as need for graduates may be indicated. The main barriers have been the desirability for some communities to want to start and conduct their own programs. Some insisted that the programs must be near where the students lived to have the graduates remain in their home community. The authors report that evidence is accumulating "to indicate that quality training can be offered through a centralized system, monies can be saved, students can be recruited, opportunities can be made available for all, and students will return to their home areas to work after being trained in a large city." This same concept is now being considered for a linkage between UAB and programs in other states for interchange of those working for bachelors and masters degrees. This is indeed a sound and commendable concept.

Another development worthy of note is that of Kentucky January which was instituted by the College of Allied Health Professions, University of Kentucky in 1972. From this date through 1976, the program has provided an extramural team educational experience for 571 students and 98 faculty in 33 locations across the Commonwealth of Kentucky. The major thrust is to open up horizons to those students preparing for an allied health career, that they will better fit into a program of health delivery. It is a concept of teams, whereby, any professional can learn the roles of other health professionals and know how and when to call upon them. The details of this program can best be reviewed by writing for the publication (Kentucky January, 1972-1976).

A New development of the University of Kentucky is the establishemnt of a Center for Interdisciplinary Education. This will extend the Kentucky January program to reach more academic programs in assisting "educational programs in the development and operation of activities which will foster and establish a team approach to the delivery of health care in their graduates." The resources of the Center will relate to "research in teaching interdisciplinary (team) concepts; development and preparation of educational materials and evaluation methodologies providing a focal point for information on interdisciplinary (team) educational activities; and providing laboratory experiences for teachers and students in an active interdisciplinary setting. The first issue of a publication which is being mailed upon request is "A Prospectus for Change" (University Kentucky, 1976).

Quality and Articulation of Education Programs

A reassessment of educational and clinical needs to be acquired by those following a specific allied health career is essential. Too often, curricula encompass only what the staff were taught. Requirements and procedures for licensure, accreditation and certification are so restricted that it is very difficult to adapt curricula to the needs of tomorrow. There has often been inadequate input from the graduates and consumers regarding the changing needs of each allied health specialty. In most instances, those in the academic world are not practicing their specialty and may not be aware of the changing needs and patterns for professional practice. If the staff are spending some time in practice, it is generally in a teaching hospital or a health facility other than where their students will be practicing when they graduate. Even though staff may use a textbook published that current year, the data and concepts may well be three to four years old.

Clinical Education

The clinical education for those being prepared for allied health is often not as good as the basic education. Clinical education may necessarily be away from the campus. Very often students are sent to clinical settings with little guidance and direction given to the clinical faculty as to what skills and competencies should be developed. While the academic staff may make site visits to those receiving clinical education, these visits are so infrequent that the visitor is limited in what they can say and do to improve the experience. In the past several years, there have been limited funds from federal agencies and private foundations to improve the quality of campus or basic education, but very little attention to improving the clinical education.

There needs to be more specific guidelines relative to what the student needs to learn while in the clinical experience. There are too many students who indicate they spent much more time in learning specific skills than was needed, and that they were "used as cheap labor." The gap between physicians in practice and faculty in the university is indeed wide. The same situation exists in allied health. We may be over-educating in theory and under-training in skills. There is no question that the future holds major role realignments. While we cannot foresee all of these trends and prepare students for them, we can prepare students to be flexible and prepared for continuing education throughout their lives for the practice of their specialty.

With the ever rampant soaring of health costs, we can expect academic units to have to pay for more of the clinical education of the allied health student. Cost accounting in health facilities will demand that education can only assume costs for having a student assigned for a clinical experience for those amounts for which service from the student is fourthcoming. The rest must come from the college, the university, or the student. While the problem of separating service from education is a difficult one, third party payors will no longer assume educational costs for entry into the labor market. The solution may be to treat allied health students, after conclusion of their didactic work, as are interns and residents in medicine. The health facility could then provide a stipend in relation to the actual work performed.

New settings for clinical experiences should be explored. Careful studies should be conducted to determine if more clinical skills can be taught from films and other visual media, simulation and student laboratories. It may be that the period for clinical training in a health setting can be shortened and still be more productive in meeting the candidates' future needs.

There is need for working out very specific procedures between academic faculty and health facility faculty where the student is to be assigned for clinical training. There is limited material on this subject, but Moore, Parker and Norse (1972) have the best publication on this issue. Clinical training must be given further consideration in allied health in order to improve the quality of the product.

Core Curriculum

A core curriculum of common bodies of knowledge is still needed. This core curriculum should include students from allied health with those from medicine and dentistry. Courses as taught to faculty when they were students are not common, but parts of those courses are common to two or more of the health professions. Textbooks written are not written for a core course. What is common should be determined and put into core courses. There should be spin-offs from these courses as material is not common. The members of the future health care team should come together to learn those things which are common bodies of knowledge and any common skills.

New Roles

Students must be prepared for effective membership on the health care team. They need to know much more about the health care delivery system, hospitals and other health facilities, community structures, and the like. Graduates in allied health and other health disciplines are often better prepared to practice their specialty in a vacuum than in the world of reality. If they are to assist in providing the environment for the practice of their specialty then they must be prepared to assist with social change. Note how the environment has changed in the past two hundred years. In 1776, the blacksmith was the heavy industry, the local wood lot the power plant, and nature's call for one's horse was the transportation pollution. Today the question is whether our environment can indeed survive. Those in the health professions must realize that if they do not accept the challenge to assit with needed changes, then these decisions will be made for them at local, state, and national levels.

With the present knowledge explosion, students cannot be taught how to practice their professions, but only how and where to learn. Continuing education will be a much greater investment of an individual's time and effort than getting a degree. We are now beginning to recognize these facts and can now challenge colleges and universities who give union cards in the form of degrees to give credit for what we know, no matter how or where it was learned.

It is most essential that those in allied health should learn to respect and understand the role of those in the health professions with whom they may be working. Before becoming disenchanted with establishing good working relationships between those in the many professions, we should realize that improved intra-disciplinary relationships as well as inter-disciplinary are needed. While allied health categories have added assistants, technicians and aides to a respective category, often they do not yet have good working relationships for those within the profession.

Unfortunately, there is much suspicion and jealousy both between the health professions and within a health profession. Jealousy is still a greater crippler than heart disease, cancer and stroke.

We continue to specialize and perhaps to over specialization. The more specialized we become, the more interdependent we will be; therefore, the greater the need to learn to cooperate and work together. Core courses and clinical training experiences, interest in the patient rather than our own vested interests, and a commitment to assist in improving the social milieu in which we live are essential to our professional success and happiness.

This "Review of Allied Health" has presented a brief historical review of the development of allied health. It has considered the need for and the supply of allied health personnel. The paper has also made some observations regarding the status of the quality and articulation of allied health education programs. These matters deserve the thoughtful consideration of allied health consumers and producers, students and faculties, physicians, dentists and health facility administrators, legislators, congressmen, and private foundation personnel. It was that great philosopher Pogo who said, "We have met the enemy; he is us."

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TOWARDS THE RESTRUCTURING
OF ALLIED HEALTH EDUCATION

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Introduction

This paper deals with some issues related to data needs for policy-making in allied health professions schools. A discussion of professionalism is presented, and a summary of various definitions of "profession" is given. Other issues dealt with include career opportunities and advancement, licensing and certification, and the role of the allied health faculty member in the health care team.

Professionalism In Allied Health

Faculty members in the allied health professions do appear to have problems of identity and recognition which other older professions do not share (Hughes et al, 1973). One knows, more or less, what a medical or legal professional service is. But given the range of activities for allied health professions faculty, it is difficult to state precisely what service is provided. The specialized branches of law and medicine, for example, stem from common cores of learning. The various disciplines in allied health--each constituting a separate professions--stem from diverse backgrounds and engender loyalties and identities unique to each. At best such diversity precludes the different professionally oriented allied health disciplines from the emulation of others; with the result that there is no identity at all. At worst, it precludes the establishment of a consensus on the definition of professionalism.

A fact that must be considered in the issue of professional identity and recognition for the allied health professions faculty is that the various discipline-related occupations are just in the process of becoming recognized as professions. Law and medicine are designated as professions without questions. The educational programs in law and medicine are homogenous and stable. Many allied health occupations which are becoming recognized as professions have no consistent or common pattern of preparation, aside from a regulated curriculum required through their respective certification and licensure agencies. There are a good many competent individuals employed as allied health faculty who have no explicit education or training for that role. These persons have moved into teaching from clinical work. These aspects should not be viewed as precluding the establishment of professional identity, or recognition for allied health professions faculty. It should be remembered that pharmacists were once licensed following appreticeships. Medical education in the last century was frequently proprietary and limited (Hughes et al, 1973).

Other contrasts emerge. The allied health professions can be classified as service oriented. Lawyers on the other hand, while service oriented, work within an autonomous status in the private sector of the economy. Allied health professionals work almost entirely in the public sector. Heterogeneity, variability and levels of maturity among the various allied health professions must be acknowledged.

Literature exists which deals with professions and professionalization in a generic sense. Much of it results from the work of sociologists. The report prepared by the Carnegie Commission (Hughes et al, 1973) is one such study. Hughes writes, "we believe that while we have attended to the peculiarities of these professions as they occur now, we have done it rather generically" (p.15). Other educators have concerned themselves with comparative studies of education for the professions (McGlothin, 1960). Another group dealt with generalized aspects, such as the historical development and accreditation of professional schools, and the licensure or certification of professionals (NSSE Yearbook, 1962). This paper attempts to present topics which allow some generalizations about education for the allied health professions.

Definitions and Criteria

What is a profession in a definitional sense and what criteria emerge for establishing an allied health occupation as a profession? What are the allied health occupational categories for professionals? How many allied health professionals are there? What are the dimensions of their education?

We find the first statement embodying criteria for a profession in Flexner's (1951) "Is Social Work a Profession?". Flexner's criteria indicate that (a) professional activities have a large intellectual component; the skill, craftsmanship, or practice of a professions rests on a body of knowledge. This knowledge is not only empirically derived but is also a product of research or scholarly activity. (b) The practice of a profession involves a craftsmanship, meaning knowledge is put to use; this craftsmanship is teachable and learnable, and is socially useful. (c) Society allocates to those who practice a professions a great measure of control of the education for it and the right to be self-policing. The quality of professional service is to be judged only by other professionals in the same field. Hence, a profession is governed by a code of ethical conduct to which its members are held, and the professional person is presumed to be basically motivated by altruism. (d) The professional practices his trade using professional judgement. In rendering such judgements, the professional operates autonomously, although he may consult and receive the judgements of his peers (Hughes et al, 1973).

Given this definition of professionalism, one might ask whether all allied health occupations qualify. Are there unique characteristics of the various disciplines which preclude meeting these criteria?

These are questions which must be addressed. Also, it is necessary to come to grips with the idea that professionalism is sufficiently prestigious so that almost all worker organizations should make, or would like to make their claim for professionalism. It is recognized that professionalism brings higher fees and higher salaries. Regulatory groups emerge as controls to protect the parameters of public service professionals by restricting invasion by the so-called non-professionals. At best these groups--many of which are clearly identifiable within the allied health disciplines--protect the interests of the practitioners and the public they serve. At worst, they become turf protectors in the most rigid and negative sense of the term.

Becker (NSSE Yearbook 1962) states:

> *One way out of (the) dilemma (is to) take a radical sociological view, regarding professions simply as those occupations which have been fortunate enough in the politics of today's work world to gain that honorific title. Accepting this view, one concludes there is no such thing as the 'true' professions and no set of*

> *characteristics necessarily associated with the title. There are only those work groups which are commonly regarded as professions and those which are not (p.33).*

It is not the purpose of this paper to argue for or against criteria for determining professionalism among allied health occupations. If, however, data needs for policy-making related to allied health professions include consideration of the issue of how professional identity and recognition can be gained by faculty, it seems important to consider whether all allied health occupational groups qualify according to traditional definition and, if not, to develop a definition acceptable to the majority and strive collectively toward attaining professional identity within that definition.

Characteristics Of A Professional

Another definition of the characteristics of a professional is provided by Schein (1972):

- *The professional, as distinct from the amateur is engaged in a full-time occupation that comprises his principal source of income.*
- *The professional is assumed to have a strong motivation or calling as a basis for his choice of a professional career and is assumed to have a stable lifetime commitment to that career.*
- *The professional possesses a specialized body of knowledge and skills acquired during a prolonged period of education.*
- *The professional makes decisions on behalf of a client in terms of general principles, theories, or propositions, which he applies to the particular case under consideration, i.e., by "universalistic" standards, in terms of Parsons' pattern variables (Parsons, 1959).*
- *At the same time, the professional is assumed to have a service orientation, which means that he uses his expertise on behalf of the particular needs of his client. The service implies diagnostic skill, competent application of general knowledge to the special needs of the client, and an absence of self-interest.*

> - *The professional's service to the client is assumed to be based on the objective needs of the client and is independent of the particular sentiments that the professional may have about the client. The profession promises a "detached" diagnosis. The client is expected to be fully frank in revealing potentially unlikeable things about himself; the professional as his part of the contract is expected to withhold moral judgement, no matter how he may feel personally about the client's revelation. Thus, the professional relationship rests on a kind of mutual trust between the professional and the client.*
>
> - *The professional is assumed to know better what is good for the client than the client himself. The professional demands autonomy of judgement of his own performance. Even if the client is not satisfied, the professional will, in principle, permit only his colleagues to judge his performance. Because of this demand for professional autonomy, the client is in a potentially vulnerable position. How does he know whether he has been cheated or harmed? The profession deals with this potential vulnerability by developing strong ethical and professional standards for its members. Such standards may be expressed as codes of conduct and are usually enforced by colleagues through professional associations or through licensing examinations designed and administered by fellow professionals.*
>
> - *Professionals form professional associations which define criteria of admission, educational standards, licensing or other formal entry examinations, career lines within the profession, and areas of jurisdiction for the profession. Ultimately, the professional association's function is to protect the autonomy of the profession; it develops reasonable strong forms of self-government by setting rules or standards for the profession.*
>
> - *Professionals have great power and status in the area of their expertise, but their knowledge is assumed to be specific. A professional does not have a license to be a "wise man" outside the area defined by his training.*
>
> - *Professionals make their service available, but ordinarily are not allowed to advertise or to seek out clients. Their clients are expected to initiate the contact and then to accept the advice and service recommended, without appeal to an outside authority (pp. 8-9).*

Policy Issues in Professional Education

In the Sixty-First Yearbook of the National Society for the Study of

Education, Anderson (1974) delineates some continuing problems he perceives as common to education for every profession . These problems are as much concerns and perennial issues as they are problems. They do, however, provide insight into the various dimensions and relationships with which education for the professions must deal. They relate to objectives or goals; the educational concerns of student selection, curriculum, and continuing education; and the relationship of professional education to a total institution and to the education and serivce of other professions.

Anderson's premise is that education is dynamic, that a continuing ferment is ever present and is normal in professional education, and that a stable state is not really attainable or desirable. Education for every profession will continue to develop and will continue to strive toward the unobtainable ideal as described earlier in this paper. Each profession will find itself under almost continual challenge to educate its students to be more responsive to human need and social concerns, to continue to broaden its scope of service, to make its service accessible to ever-expanding numbers of persons, and particularly to those heretofore deprived of or limited in receipt of professional service, and to become more preventive than therapeutic in dealing with social or personal ills, aberrations, or pathologies.

Professional Service Uniqueness

The objectives of education for the mature as well as for the emerging and striving professions are always in flux. Anderson holds that each profession assumes a uniqueness of service, or at least a minimum of competition with other professions in their service responsibilities.

Anderson's premise is particularly relevant when viewing the allied health disciplines where there often are no clear lines which constitute uniqueness between related programs within a discipline. How, for example, do we expect the public to clearly differentiate between the knowledge and skills of the Medical Record Technician and the Registered Record Administrator? Between the Medical Laboratory Technician and the Medical Technologist? If an allied health discipline's professional identity and recognition requires values and services that are unique to all other, it would appear that a need exists to bring such unique distinctions between programs in disciplines clearly into public focus.

Menges (1974) offers a somewhat unsettling observation in regard to the issue of professional identity and recognition. In answer to his question of how the aspiring members of the helping professions are cultivated, Menges says that programs of education for the helping professions have been determined by the fiats of tradition; that professional education has been supervised by elders in the profession and has served their interests well.

> *Professional education has not been primarily oriented to the needs of clients whom professionals are to serve. Specifically, few programs of professional education have been characterized by the following (1) clear underlying theory; (2) explicit, communicable objectives; (3) replicable procedures; (4) follow-up validity studies (p.231).*

Menges goes on to say it is this "ambiguity of intent and content which protects the professions against criticism. In the absence of clear objectives, failure to achieve them cannot be demonstrated. In the absence of evidence, program inadequacies cannot be exposed". Menges does not offer data to support his conclusion. While one is hesitant to concur with his position in the absence of data, it is interesting as an expression of at least one professional educator's view.

Both Anderson and Menges purport that there are better ways of educating persons for roles within the professions. It might be that the various allied health programs provide one logical beginning point for surveying data needs for policy making related to the allied health professions. Data could be obtained on the extent to which the programs are reflecting changes in keeping with health care technology. Data could be obtained on efforts being made to communicate the unique characteristics of various programs--a requisite for eventual professional identity and recognition. The extent to which programs within the disciplines invite extra professional review could be noted.

Curriculum Development

Curriculum within the various allied health programs is, perhaps, more talked about, discussed, evaluated, tinkered with, reconstructed, overhauled, disassembled, and reassembled--in short, continuously under surveillance--than any other aspect of allied health professions education. The dynamics of allied health professions education and the importance curriculum plays in it, brings this continuous self-scrutiny about.

Stresses among persons who exert influence on the curriculum are also responsible. There has been and always will be some degree of conflict between scholars in a field (educational theorists and researchers) and practitioners in a given allied health discipline. The point in identifying this conflict is not to attempt suggestions toward repairing the lines of communication between the educational theorist and the practitioner, but to indicate that--partly because neither generally acknowledges the relevance and contribution of the other--both sometimes fail to insist on an improvement in the statement of allied health professions educational priorities.

The priorities in allied health professions education emerge as a crucial issue for policy-making in the future. These priorities are closely tied to the extent to which professional identity and recognition emerges from the public served by the professionals and the extraprofessionals in contact with the programs on whatever basis. Certainly, priorities emerge as data. They are indications of value or importance as seen and expressed by administration, by faculty, by accreditation bodies, by certification and licensure groups. As is true with other judgement data such as curriculum objectives, ethical codes, and professional ideals and standards, priorities emerge as data which can and should be viewed. For example, allied health programs involving courses in the basic sciences might find those faculty desiring more emphasis on basic science, knowledge and theory while clinical instructors want more emphasis on the clinical aspects of the curriculum.

The table of contents of Schein's book, Professional Education, (1972), lists conditions that can produce curriculum change: the changing work setting of professionals; new clients with new needs; changing needs of society; the profession's perspective on itself; changing values and needs of students; and criticism of the professions that emerges from a variety of sources.

Continuing Education

A viable concern to the allied health professions faculty emerges in the area of continuing education. It would seem wise to collect data for future policy-making decisions related to the various conceptual bases for continuing education, its modes or organization, its delivery systems, and its bases of financial support within the broad spectrum of allied health education. In this regard, much might be gained toward establishment of professional identity and recognition in addressing one question which emerges time and again in the literature: Should continuing education be a primary obligation of the initial educating organization, i.e., the professional school or institution, or of the organized profession? There is little if any agreement among the professions and colleges and universities about this.

Medicine, historically, is characterized by very extensive continuing education programs, and the organized bodies involved in it are several. Funding is often provided by the states. Medical colleges, center, clinics, and hospitals often collaborate with organized medical societies, utilizing physicians who are in practice or practicing physicians associated with medical colleges, to conduct continuing education programs. Alumni of a given medical school, or dental school, particularly if they are concentrated in a metropolitan area or a region of a state, often organize clinics and medical lectures around alumni gatherings.

This would be one method for establishing professional identity and recognition for allied health professionals. Hughes et al (1973) suggest that "continuing education in medicine and other health related professions merits the careful study of other groups who are still in the stage of early or limited development of continuing education programs"(p. 11).

Public Expectations

First, the allied health field is confronted by new public expectations and demands. These affect not only what is done, but how it is done. Moreover, they affect the perceptions held by the public and extraprofessionals in regard to the professional identity of the allied health workers.

In the past, it has been largely up to the various allied health disciplines and the professionals within them, to define the needs and ways of meeting them. In large measure, the definition of needs and procedures for meeting these needs were those which the various professions considered to be the most efficient and effective. However, the recent stress on meeting public expectations, and the attendant growth of participative decision-making, necessitates a new approach.

Technical and Financial Resources

The miracle of technological advances is almost a cliche. Many new procedures have given birth to many new allied health technology areas. If allied health professions educators are to continue determining their own destinies, then it follows that they must be effective in dealing at the levels where decisions are made.

It is fundamental that our health system today is too complex for a compartmentalized structure. Closer working relationships are being established (sometimes painfully) among health schools across the nation. This is due largely to then expanding service demands of the fields for which the schools are developing health manpower. It parallels the growing use of interdisciplinary teams in a variety of health care settings and the breakdown of some of the more rigid health occupation barriers and job descriptions. It is axiomatic that cooperation among the various allied health professions is essential in order to prepare graduates for the real world situations they will certainly experience.

The future health care system in our country will, it is generally agreed, place increasing reliance on the allied health professional. This will emerge as one of the major elements in the effort to bring order and a degree of organization to the total health care system and thus serve the largest number of people with quality health care at the most prudent cost.

It would seem advisable that publicly supported allied health professions education programs move quickly toward the removal of arbitrary and artificial berriers between those programs which might now be separated by little more than blind obedience to a discipline.

The Health Care Team

It is fortunate that a boost toward closer relationship between various health professionals will likely result from federal legislation such as the Health Manpower Act, which directs resources into medical schools for such activities as health services organization and management, comprehensive health services in rural areas, and the use of auxiliary health personnel. This, in and of itself, would appear to demand closer cooperative efforts between the various schools of allied health and medicine as a means of bringing together all necessary expertise. Moreover, and of equal importance from the standpoint of issues facing allied health professions, what once was a need has now become a demand for closer cooperation among the disciplines.

In recognition of competence and need from outside allied health, it is necessary for allied health professions to establish closer relationships with schools and programs even outside of the health field--schools such as business, social work, economics, and urban planning. This is necessary because health care is too big a business with tremendous social impact, an economics of its own, and a close functional relationship to urban growth. In this area, students sometimes tend to be ahead of faculty. They see these interrelationships and seek to enroll in courses in other areas, when possible. In planning allied health programs for the future, it is wise to consider what the non-health related disciplines have to offer. The luxury of territoriality in educating tomorrow's allied health professionals cannot be maintained.

The health care team emerges as more than a joint venture with some esoteric cooperative goal. Health professions education for the past half century has become increasingly disociated from societal goals and more and more concerned with intradisciplinary questions. As a consequence, it is now necessary to face this issue because of pressure on the most vulnerable sector--budgets.

Additionally, the health professions education apparatus is being challenged to ask itself whether the educational process could not be made more efficient, whether the present high cost of health care is justifiable, and whether we are producing the type of allied health professionals and the proportion of types required to meet societal health needs.

With the exception of a few peripheral areas, more or less peculiar to one or another health specialty, the health professions are all concerned with the fundamental questions of human health and disease--the prevention, amelioration, and cure of health problems--and with helping people to maximize their own health status or to cope with their individual health problems. The premises for the establishment of an interdisciplinary health care team, as developed by Heaney (1974) include:

- *There is an essential, intrinsic unity of the health sciences--a unity of content, purpose, and, for the most part, orientation as well.*

> - *Separation of health professionals into major categories is arbitrary and imposes unnecessary and possibly harmful constraints upon their educational production.*
>
> - *The personal and functional goals of health professions students, even within apparently homogenous categories, are diverse.*
>
> - *The available amount of worthwhile, useful, and important information in the health sciences greatly exceeds that which can be compressed into standard health professions curricula.*
>
> - *As education for health professions careers has evolved over the past century, new knowledge and new career options have been accomodated principally by lengthening the education process, usually at both ends, i.e., by post-graduate specialty programs and by augmented preprofessional requirements.*
>
> - *The clinical disciplines are misperceived if they are seen to be applications of the "basic" sciences, and this misperception has created a semantic gap, both for the education process and for curriculum planning (pp. 324-325).*

As an issue for future policy-making in relationship to the allied health professions, participation in interdisciplinary health care teams established within schools of allied health or larger health education institutions merits close attention.

According to the Institute for Health Team Development, Montefiore Hospital and Medical Center in the Bronx, "A health team is a group of two or more health workers who must work interdependently to accomplish a task". The team is also defined as a transitory social system consisting of a number of persons working together for a defined need and mutually-accepted goal and according to a mutually-accepted program in which each member accepts and understands his functional contribution to the goal and that of his partners.

The essence of these definitions appears quite basic, people have to learn how to work together. This is especially true today when the complexity of modern health care delivery has, of necessity, created an interdependence among health disciplines which necessitated interdisciplinary cooperation. This interdependence among health professionals makes then a team, not "the" health team, but many kinds of health teams working in many different patient-care situations.

Involvement in interdisciplinary health teams can provide many benefits for the participants:

- *Through realistic exercises, specific experience in learning about group processes can be gained.*
- *Understanding of roles and contributions each health professions or allied health discipline might offer to health care delivery.*
- *Identifying and promoting maximum use of all health care personnel to improve health care delivery.*
- *Reducing competition among the professions and allied health disciplines, and reducing duplication of services to the consumer.*

Heaney (1974) discusses the health care team at Creighton University in terms of practical curricular structure, which he defines as:

- *Separating formerly monolithic lockstep basic science courses into modular components which offer both greater depth of study and greater diversity of topics.*
- *Making at least some components of all courses elective.*
- *Treating the pool of courses offered by the various health professions schools as potentially open to all health*

> *professions students, provided only that each has the appropriate prerequisites, and that the course serves as a useful component of the programs he is pursuing.*
>
> - *That students will take courses, not whole-year blocks, and hence will be able to proceed through professional school either faster or slower than their classmates.*
> - *That there will not be proliferation of departments according to school lines, but that there will be instead a single pharmacology faculty, a single biochemistry faculty, and so forth, and that these faculties will teach heterogeneous groups of health professsions students not segregated according to the old professional boundaries.*
> - *That (we) distinguish between the acquisition of knowledge and the development of practical skills, and that (we will) not use a costly clerkship method to teach a student whose program requires only content knowledge of the field concerned (pp. 328-329).*

Such a practical curricular structure as described by Heaney, in and of itself, would appear to be an accomplishment well worth the time and effort in its establishment. Of all of the issues important in policy-making related to allied health professions in the future, consideration of implementing health care teams might well emerge as the single most meaningful venture.

Policy Issues In Licensure And Certification

For the past several years, the issue of licensure and certification for the allied health professions has received a great deal of attention. In much of the literature dealing with this issue, there is the inherent question of whether the various procedures utilized in conjunction with licensure and certification accomplish the overall purpose of assuring that individuals trained for employement in the various allied health professions actually possess all of the many specific skills and knowledge necessary to fulfill their responsibilities as practitioners.

To some degree, the concern to protect the public's health, welfare, and safety through certification and licensure requirements brings increasing demands for the identification and quantification of observable behaviors which, in turn, are said to permit precise measurement of and facilitate decisions regarding an individual's competence at predetermined performance levels. An additional question is whether the certification and licensure requirements, via accreditation guidelines, have always resulted in an improvement of program outcomes.

In the literature reviewed, there is some indication that evaluation of allied health professions educational programs solely at the hands of accrediting agencies serves a somewhat narrow purpose of maintaining the professional identity of the program at the expense of the students and consumers of the health care services. Haywood (1974) says there are three basic myths which illustrate the lag in the real world of accreditation:

- *The American system of accreditation is voluntary.*
- *A major role of accreditation is to inform the public that certain minimal standards necessary to produce good education are being met.*
- *A major goal of an accrediting agency is to foster innovation and improvement of the existing program (pp. 226-227).*

In discussing each of the "myths", Haywood says:

> *Submitting to or seeking out accreditation is about as voluntary as calling a physician when you are struck with a heart attack. The real fact is that the public does not even know what the minimal standards for accreditation are. As a matter of fact, even faculty view program accreditation as self-serving to limited disciplines and of highly questionable value. The reality is that endorsement is sought; not minimal standards. Fostering innovation and improvement of existing programs can be interpreted to mean that 'normal' is always safe and mediocrity is always acceptable, if not encouraged (pp. 228).*

Another negative view is presented by the former Director of the National Council for Accreditation of Teacher Education (Educational Records, 1972) who says that accreditation standards, by their very nature, are inhibitory. They cannot be written at the leading or cutting edge of experimentation. The problem is to have them solid and tested, and yet have them as far forward, as progressive, and as innovative as possible.

A data need for policy-making related to allied health professions is the extent to which allied health professions programs are using resources wisely. Certification and licensure is a definite issue; particularly when accreditation hinges so closely to the extent to which graduates are certified. In fact, in some instance, certification and licensure are terms used interchangeably with program accreditation.

The public does need to know and, in fact, is beginning to demand to know whether publicly supported allied health professions schools are using resources well. Most allied health professions education programs can profit from an outside source in the very broad area of self-improvement, or in recognizing valid goals and objectives. The question, however, is whether accrediting agencies, many of which are viewed as self-perpetuating and self-serving, can or will respond to the broad purposes of allied health education--producing higher quality health care professionals at reduced costs to the consumer.

A most crucial question emerging from the research related to the certification-licensure-accreditation issue is: Can our publicly supported schools of allied health continue providing education in the many different disciplines, for an ever-increasing number of applicants, without looking at program outcomes based on the effects of the total interaction of curriculum, content, and consumer needs? Rhetorical questions do not require specific answers. However, rhetorical questions can provoke consideration of issues for study and introspection, and can ultimately lead toward the identification of possible alternative approaches to the generally unfavorable status quo which provokes non-rhetorical questions from consumers who realize their right to concrete, specific answers.

A problem to be viewed is that some rather important distinction must eventually be made concerning the kind of data which should be of primary concern in the area of certification-licensure-accreditation. Until this occurs, the view expressed by Anderson (1974) might likely continue to be held:

> *Despite its history of nearly a century and a half, and its pervasiveness, accreditation is not generally understood by the rank and file of educators; and even among those who do understand it, it does not have complete or full support. While the nation is now blanketed by regional accrediting agencies, and further need in this sector is not forseen, it is*

> *inevitable that as occupations achieve professional character or as new professions are created, the need for new professional accrediting associations will occur. There is every reason to believe that in the next two decades new areas of professional service will emerge, as have the allied health fields. In some instances these will be clustered around an established profession. In others, significant new occupations or substantial modifications of existing ones will occur (p. 34).*

One way to gain insight and understanding of the historical antecedents, current issues and concerns, and alternative modes of action for accreditation of professional programs is to review the work of the Commission for the Study of Accreditation of Selected Health Education Programs. This study was sponsored by the Council on Medical Education, the American Medical Association, the American Society of Allied Health Professions (formerly the Association of Schools of Allied Health Professions), and the National Commission on Accrediting, and was funded by the Commonwealth Fund.

The final report of the Commission sets forth the issues covered in the study, basic policies for accreditation, and conclusions and recommendations.

In a final observation, the Commission comments:

> *The economic, political, social, and technological pressures that are forcing changes in all aspects of society are also requiring that the structure and operations of accreditation be revised. Cognizant of the need for change, the American Medical Association of Selected Health Professional Educational Programs, and with the Association of Schools of Allied Health Professions and the National Commission on Accrediting, has co-sponsored the Study of Accreditation of Selected Health Education Programs (SASHEP).*

> *In this report the SASHEP Study Commission has presented specific recommendations for the creation of a new organization to be responsible for the accreditation of the selected health educational programs that are the primary focus of the study. The creation of this new organization would be a constructive reponse to the pressures facing accreditation. However, the creation such an organization would not alone be adequate for the needs of the times.*
>
> *Of even more importance is the need for recognition and acceptance of the concepts contained in this report on the part of all agencies and organizations directly concerned (underlining added) with the accreditation of the selected health educational fields. To attain this objective, the Commission believes that the threee co-sponsors of SASHEP must immediately initiate steps toward joint consideration and implementation of the concepts presented in this report (Educational Record, 1974).*

This detailed report offers a program aimed at maintaining "predetermined qualifications or standards" for the several health related professional education programs. According to Anderson (1974), "The final observation of this study can be interpreted as saying 'Let's stop arguing and accept this study and without further controversy accredit the programs in the allied health fields".

An issue of importance for policy-making is a determination of what constitutes the appropriate certification-licensure-accreditation process; what procedures and techniques should be utilized. It is this determination which can be made by the application of sound data to consistent problems to the total issue.

Restructuring Allied Health Professions Practices

Career Development Perspectives

A consideration of the process of restructuring allied health educational practices relating to career development requires that attention be directed in a very practical sense to several areas of knowledge pertaining to administrative organization, operational procedures, personnel, and other factors which influence change in the setting in which these practices operate. Educational activities related to allied health programs function within the structure of an institutional program and are an integral part of it. They do not exist in isolation and, therefore, must be considered in relation to other programs and activities. Furthermore, new ideas concerning objectives, curriculum materials, and anticipated outcomes may be ever so valid and attractive, but these ideas are translated into action only when they become educational practices within the structure of an organization. It takes people to do that. Consequently, it is necessary to consider faculty and proposed changes in specific practices in the context of the climate and organizational structure in which such practices may exist and function.

Structure may be considered in terms of the organization of specific practices such as those related to the teaching-learning processes, curriculum formulation, or guidance services. Another view is that structure may be considered in terms of the total organization of the system in which the practices function. In this section of the paper some attention will be given to both views, for they have rather involved relationships and in many ways are interdependent.

Any need for restructuring procedures for either the specific practices or the total organization does not exist in a vacuum but is related to the purposes which are implied in the stated objectives to be attained. In this discussion the purposes relate to objectives for career development. After the objectives have been stated and the anticipated outcomes projected, the next step is to study the existing structure of practices and organizations to determine their appropriateness, scope, and adequacy in making it possible to do the job that needs to be done. Such a study may well include some projections in terms of anticipated needs in the future as may be indicated by the objectives. If this approach, which would include both observation and analysis, indicates need for restructuring of specific practices or changes in the organization in which the practices function,then attention needs to be directed to a study of the ways that changes are actually made in an educational setting.

Any attempt to restructure allied health educational practices or to change the organization in which the practices operate is a complex and complicated undertaking, at best, for a number of variables and conditions needs to be considered. Examples of some of these factors may well include the training and attitude of faculty, the quality of leadership, influence of traditional operational patterns, rigidity of organization, general attitude toward change, priorities in objectives, and the climate of working relationships. These are not necessarily barriers to the restructuring of allied health educational practices but they are realistic conditions which will be encountered in the process. Actual change in allied health educational practices, if one goes beyond the superficial aspects, does not come to a significant degree from authoritarian pronouncement alone. The entire process must relate more directly to the people who will be involved in the changes to be undertaken; the faculty and related support personnel.

The Influence Of Policies

Action programs in educational practices are undergirded by policies which represent general plans, intentions, and a framework from which programs may emerge. Although policies are usually stated in general terms, they represent a commitment to certain ideas and principles. Policies are not usually made by individuals but by groups. Examples of groups currently active in making policies relating to allied health educational problems are boards of education, both state and local; legislative bodies; administrative organizations; and professional associations. The policies which have been made in the past have furnished the base from which many fine programs have been developed and many contributions have been made in the area of allied health education. Evidence indicates, however, that much remains to be done. There is need for expanded programs of allied health education and for more extensive and deeper commitment to career development.

In response to this need, policies must be strengthened on national, state and local levels. Such policies are essential and form the framework which makes program development possible, but it can be observed that much of the action in terms of educational progress occurs in local school practices. The following questions illustrate the type of inquiries which may be made as policies are implemented locally, especially those which require the restructuring of practices. One question may be whether career development is a matter of an opportunistic or a planned approach. The view adopted would make a great difference in the type of program developed. Some persons may assume that the availability of health occupational information materials in sufficient quantities will take care of the matter. Other may think of allied health occupation choices in terms of immediate goals relating primarily to entry jobs rather than in a long range health career development perspective. Some may regard career development activities as peripheral issues, but not really a part of the central focus. Still others may feel that the traditional differences between so-called academic and vocational goals constitutes a gap which can not be bridged successfully in allied health educational practices.

The process of restructuring allied health educational practices requires ideas first, and then the tools and resources to get those ideas reflected into action. Many of the tools and resources requisite for action and progress are available for use. We have an increasing number of trained personnel for leadership roles in staffing programs, although the need for additional qualified personnel remains great. There is available for reference a substantial body of literature dealing with problems of health career development. Challenging theories of career development which afford generalized frameworks from which programs may be evolved have been advanced. Research evidence and application in teaching-learning situations. Much more is known about factors which affect career development than was true only a few years ago. Models and examples of exemplary practices are available for examination by those who may be interested.

It would appear that the process of restructuring allied health educational practices in the area career development in the direction of facilitating the attainment of expected outcomes is not limited by underlying policy, scarcity of ideas, or resources. Rather, it may be indicated that the motivational thrust for changes that may be needed must come from a desire to do something about the problems with the resources which are available.

Curriculum Development

In a general sense, allied health educational practices are a reflection of the understanding of objectives and the efforts to bring about their realization largely through teaching-learning experiences related to the curriculum. The trend in allied health curriculum formulation plans is to stress behavioral objectives rather than to be satisfied with mastery of subject matter content alone as the highest standard of attainment. The acquisition of knowledge needs to be related to something rather than be considered as an end in itself. From this view, the student becomes the ultimate product of the program. How the program experiences influence his development as a person becomes a matter of central concern, with career development emphasis taking high priorities. Criteria for assessment of the quality of allied health education focuses on the student from a perspective of what he is and what is his potential rather than on just what he knows.

This emphasis on behavioral objectives opens wide the door for curriculum programs of career development. It is assumed that when objectives change, allied health educational practices must adapt and respond to the new expectations. In those instances in which allied health educational programs did not develop a career consciousness on the part of students and in those cases when courses were considered to be incomplete or ineffective, as judged by students, various forms of escape including dropping out were likely to result. The organization of experiences around behavioral objectives promises to produce improvement in this regard, for it makes the role of work in the life of the individual appear in a different perspective and matters pertaining to career development of immediate concern to both allied health students and educators. The scope of these possible curriculum designs is limited only by the personal, social, and economic needs of students. This suggests the constant attention to restructuring of practices in response to changing needs.

The idea that activities relating to career development should begin early in the elementary school has substantial support from research workers and to many others who have studies the problem. The acceptance of such an idea, however, does not guarantee that anything will be done about it. The reality of the implementation of the idea is conditioned by the actual curriculum experiences which are provided and by the way the teaching-learning activities are directed by teachers and specialized staff personnel.

It is not to be expected that experiences of early elementary school children in career development would consist of miniature duplications of efforts at developing technical skills. At this elementary school level curriculum workers and teachers may be concerned with exploratory experiences about self and things in the environment that children of this age can perceive. All this will involve appropriate materials and instructional aids. In the upper grades some content pertaining to career development can be integrated into the social studies curriculum. As students move toward junior and high school levels, attention can be given to the development of core courses, clustering of experiences, efforts to show relationships between academic life and the world of work elements in making career choices, approaches to the world of work, acquisition of requisite competencies and skills, placement, etc.

From this type of base, practices may be structured to project a program of developing and expanding activities in harmony with anticipated outcomes. Activities and experiences will differ with various age groups and in different units of a school system, but a key element in this developmental approach is that of continuity. Attention to the factor of continuity can make it possible to weave career development experiences into the program of an individual student so that this will not be regarded as an isolated bit of content to be scheduled some semester or term and finished.

Factors Which Influence Restructuring Process

An analysis of how an allied health school is organized and operated would reveal both formal and informal aspects. The formal part of the organizational structure is largely impersonal in nature. The organizational components of the formal aspects can be chartered in terms of hierarchy of positions, flow of authority, and assignment of responsibility. The informal features of the structure are quite different, for they consist of the people who fill the positions and who actualize the roles. They constitute the part which enables the institution as a whole to function, to have vitality, and to change in response to need. Many of these informal, personal relationships are very difficult, or even impossible, to show on a formal organization chart. But changes occur in faculty in relation to what they believe, what they attempt to do, and how they go about doing it. This formal aspect of the educational organization provides the avenues by which faculty work together to achieve goals. Professional competencies, leadership skills, and proficiencies in various interaction techniques are at a premium in this area. Consequently, some understanding of this organizational structure, both formal and infromal, and how it functions is pertinent to an awareness of how change takes place in restructuring allied health educational practices.

The organizational structure of an allied health school is not a design which was dictated by considerations of expediency at any given moment, but it rests on a solid foundation consisting of such elements as philosophical and sociological ideas, economic facts, political considerations in terms of welfare of the state, legal precedents, personal experiences, analysis of need, and aspirations of people. These are examples of the types of factors which may be recognized in any change process in educational practices. Any of them or several in combination may become important influences to deal with in attempts to modify what is already in existence and functioning. Several of these elements will be discussed briefly as examples of influence in the actual change process in an allied health school.

Legal Considerations

A publicly supported school of allied health rests on a legal base. It was created by legislative action, either mandatory or permissive, and operates within the prescriptions and limitations of precedents, interpretations and designated responsibilities. Some of this legally based authority functions by being expressed in administrative guide lines which are usually administered from the state level. These administrative guidelines may relate to such things as qualififcation of personnel, statements about curriculum to be offered, classification or accreditation, financial accounting, approval of facilities, certain practices as schedules and length of time periods, and special services which may be offered.

Many of these administrative guidelines indicate standards only on minimum levels, thus allowing the permissive features of this legal framework to provide ample flexibility to initiate and carry out changes and extensions beyond the minimum requirements as is the case with certification and licensure agencies. On the other hand, mandatory provisions, local or national, may tend to produce a degree of conformity and really inhibit changes. For example, courses and curriculum units may be reained to conform to prescribed course offerings for certification requirements. The point is that recommendations for changes need to be made with an awareness of their relation to legal requirements and legally based administrative guidelines.

Preparation Of Personnel

The quality of professional service rendered by faculty, whether it be instructional, administrative, supervisory, or special service such as guidance, should reflect the previous academic and professional preparation which the persons rendering the service have received, the type and character of their previous experiences, and how they arrange priorities in what they consider to be most important in their work.

Restructuring allied health educational practices, then, implies more than the development of packages of curricular materials or sets of recommendations that certain changes be made. These are necessary steps, to be sure, but there must be, also, changes in the people who operate the allied health in terms of their personal expectations, attitudes, and professional competencies if any real and lasting changes are to be accomplished.

It is recognized that the program director, the teacher, the administrator and other personnel work in areas of specialized service. Successful performance in these specialties requires specialized professional competencies. It is equally true, however, that no educational service regardless of whether it be instructional, guidance, or administrative can exist and function in isolation. They are interdependent. Any particular service is affected by what is done in other services, and its influence is felt in turn by others.

This is not intended to suggest that the professional preparation programs for allied health education personnel neglect nor minimize the importance of specialized competencies and performance. It is proposed, however, that more consideration be given to the relationships in practices as they function in order that the total resources may be centered on the needs of students. This relationship emphasis requires attention in both pre-service and in in-service programs. This is not to suggest that allied health education programs prepare only generalists, but rather a change in designs which will tend to build bridges of understanding concerning the contributions of various disciplines and specializations and their relationships as they function.

The in-service emphasis related to continual professional growth and improvement, whether formal or informal in type, may be designed to utilize a team approach in dealing with problems rather than to depend almost exclusively on individual discipline effort. Plans to utilize professional talent to effectively build bridges of understanding and to obtain maximum cooperative effort will need to depend heavily on administrative leadership for initiating the changes which will bring specialized services into closer working relationships. Administrative leadership of this type, however, is limited primarily to providing the means and the direction by which changes can be made. The real burden of making changes effective, and sustaining successful progress after programs have been started, rests on the competencies of the professional staff and what they really desire to do. Consequently, the preparation of a professional staff, the motivation toward improvement, the leadership provided locally, the level of expectations, and the skills in working together are all major influences to be recognized in any plan for restructuring allied health educational practices.

Prevailing Organizational Climate

Organizational designs from an administrative view may be influencing factors in facilitating or hindering changes in allied health educational practices. These designs may contribute in various ways to a working pattern of relationships which constitute a climate in which practices operate. The professional staff, the students, and the public are responsive to features of this working climate.

It is possible for the administrative structure to be so rigid that it is primarily a controlling rather than a facilitating arrangement. Traditional ways of doing things may be the accepted norm and really constitue a formidable barrier to change. The philosophy underlying the allied health programs, the statements of objectives, and accepted standards of performance may be passed along from year to year without a great deal of examination or staff involvement on the policy level. There is an accepted way of doing things. The type of professional performance which meets approval, curriculum development, and procedures for evaluation may all be based heavily on institutional expectations. In an organizational climate of this sort, resistance to change or a disposition to let well enough alone may be encountered as important forces.

Although innovation may not be precluded, it is not encouraged substantially in terms of time allotments, financial support, special facilities, or recognition of innovative effort. The outlook of faculty is likely to respond to this type of climate by recognizing factors in the total situation in accordance with their assumed importance to the organization. Attempting to make changes in allied health educational practices in a situation characterized by rigid administrative controls without understanding the components and operational forces in such a climate may turn out to be a frustrating experience.

Must teachers, curriculum workers, and other on the personnel staff regard rigid organization as inevitable and an insurmountable barrier to change? The answer is negative. The model just described is extreme. There are many organization models which provide quite a different working climate. Good administrative organization opens doors for analysis of problems and works to facilitate change in response to demonstrated need. In such a climate there may be found freedom to utilize talent, encouragement, challenge, and the means to implement change in practices.

There will be created many ways for the development of cooperative working relationships. These will include a tear approach to the consideration of problems. This does not refer to classroom and clinical teaching alone, but to opportunities for specialists in curriculum, instruction, and others to pool their specialized knowledge and bring it to focus on the problem at hand whether the problem be in the area of stated objectives, administrative concerns, curriculum development, effectiveness of instruction, assessment of needs, or measurement of outcomes. The basic strategy is to utilize the full potential of the professional competencies of the staff.

The process of change, then, requires an organizational climate which is responsive to an assessment of need for change and the resources to develop action programs of need for change is established. These action programs will involve personnel prepared with the requisite competencies in their professional training, a challenge to seek ways of improvement, an organizational design which facilitates opportunities to work together, and interpretation programs which build a firm base of public understanding. All this implies clarity of objectives, cooperative working relationships, and measurable outcomes.

The influence of rigidity of organization on attitude toward change in the prevailing climate of an allied health program has been mentioned. It is not intended to imply that this is the only factor. Many of the elements which support this attitude toward change are more personal in nature. Past experiences, personal preferences, the regard of colleagues, levels of confidence, recognition and reward of effort, and standards of performance which produce personal satisfaction may all have effects in influencing attitudes of individuals toward the roles they may play in changing allied health educational practices.

The clarity with which role definitions are formulated and mutually understood furnishes a basis for cooperative action, and also a basis for accountability for the quality of individual performance. This is an important element in prevailing climate. The values of this aspect of a working arrangement in which roles are defined in mutually acceptable terms accrue to both the individual and the organization.

Channels of communication constitute another important element in a prevailing climate of working relationships. Channels which are too formal tend to slow down the process and to limit what may be communicated. At the other extreme, communication channels which are too informal can result in confusion, incomplete information, and dissatisfactions. The plan for providing channels and means of communication calls for recognition of both the formal and the informal aspects. What information needs to be shared and with whom should it be shared? How shall this information be communicated, recorded, and used? How may information be received as well as sent out? These are typical questions in consideration of plans for more formal needs of communication. Some of the channels are vertical, representing movement through the lines of hierarchical positions. Information should move both up and down through these vertical channels. Other lines of communication need to be horizontal with information moving in and out to members of a department or unit with similar or related interests.

There exists, also, unstructured informal patterns of communication. These are often very effective, even powerful means of communication. Since such means are largely uncontrolled, they may reflect either positive or negative characteristics. Personal attitudes, biases, rumors, and incomplete or inaccurate information may be expressed. The positive side may reflect accurate information, personal satisfactions, appreciation for recognition of service, rewards for achievement, plans for change, and reports of progress. This informal type of communication can be an important influence in planning changes in educational practices.

Summary

This discussion has attempted to recognize that changes in allied health practices should be made in response to demonstrated needs, clear directions in terms of objectives, and effective procedures for implementation.

The basic view has been that the process of actually making the changes in allied health educational practices is not characterized by formal type procedures, nor can the changes be imposed from above. This is because the changes are really made by the people working in the educational environment. This approach necessitates some recognition of the allied health school as an organization of people, and the various influences which condition the type and quality of educational service rendered become matters of prime importance. It also tends to direct attention to the need to create and maintain a creative working environment in a school system which will stimulate individual action and serve as a foundation from which the process of change can be facilitated.

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INFORMATION NEEDS FOR ALLIED HEALTH POLICY

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Overview

Due to the rapid growth of health education activities nationally during the past decade, it has become increasingly critical that reliable, statistical information be made available which can be utilized by those responsible for providing health care to the citizens of our nation, by those responsible for the education of personnel who provide this care, and by those who must make decisions relating as to how these necessary educational efforts will be financed. Without such data, it is difficult, if not impossible, for administrators, whether they have a national, statewide, or institutional responsibility, to make intelligent decisions about resource allocation. It is also difficult to determine which institution(s) of higher education or health facility(s) should provide the educational experiences that would insure high-quality, health-care personnel of the appropriate mix in locations where their services are required.

Manpower Supply, Demand, And Distribution

For a variety of reasons, the supply of and demand for manpower, as well as the distribution of the supply and demand, have developed as key factors in the review of the allocation of resources. With the frequent scarcity of funds, facilities, and equipment, state and federal agencies concerned with the education of health manpower and the assurance of the availability of a quality health care system are increasingly concerned with a series of questions associated with the supply, demand, and distribution of the various categories of workers engaged in health professions and occupations. Major legislation which includes the Health Professions Assistance Act of

1976, the Health Planning and Resources Development Act of 1974, and the Nurse Training Act of 1974 has provisions which either seek to improve the distribution of health related personnel and/or require the periodic assembly of information which will indicate the relative need for manpower in a specific geographic locality.

Health Professions And Occupations As Careers

An examination of health personnel is a complicated process. Although the licensed health professions in many states number number only fifteen or sixteen, approximately 325 categories of health workers have been identified. Many of these fields include only a few individuals nationally. The vast majority receive on-the-job training to become proficient in their specific area of responsibility, although other health professionals, such as the speech pathologist, audiologist, and hospital administrator, require a master's degree as their minimum professional training.

Supply And Demand

For the purposes of this paper, the following terms are defined:

- Need - The need of a population for medical care is defined as the existence in the population of physiological or psychological conditions for which there exists treatment or cures. The conditions may or may not be known to those afflicted and, if known, relief may or may not be sought.
- Demand - The demand for medical care is when a person recognizes his condition(s) and seeks professional help. Thus, demand can be equated with the perceived need of the population for medical care. This definition contains actual plus imagined problems. Demand, whether actual or perceived, may be greater or less than the capacity of the medical care system to provide care.

- Utilization - Utilization is defined as the actual use of the medical care systems or individual parts of the system by the population in seeking relief from their health problem(s).
- Requirements - Requirement is defined as the number of health professionals of a particular occupation that are needed to meet the stress created by the population as measured by utilization rates.

Health Manpower Studies

Prior to 1965, the few studies of the supply of and demand for various categories of health manpower were one of two types. The first type was commissioned by an existing or emerging group of health professionals who wanted to determine the extent of their field and provide justification for requesting additional resources to expand educational programs. The second category was that undertaken or commissioned by any of several federal agencies. These studies frequently had as their purpose the determination of the number of individuals who were either available or needed to provide a specific set of services to maintain or improve the quality of health care in our nation.

During the past decade, a series of events has led to a rapid expansion of the available supply of and demand for health manpower and created an environment which has led to an exponential increase in the number of health manpower studies conducted. These events included the development of Medicare, Medicaid, and Titles 18 and 19 of the National Social Security Act which provided billions of federal dollars to help pay for health care services. Then, the increased demand generated by the availability of subsidized health care necessitated the education of additional health-care personnel. The Allied Health Professions Training Act of 1966 proved a powerful force which led to the rapid expansion of the number of institutions participating in the education of those providing health-care services and the number of programs at these institutions. This act also created problems because of the drastic, overnight change which occurred in the demand for certain scarce resources, such as adequately trained faculty for the health education programs and clinical laboratories suitable for use in the educational process.

Those responsible for the Regional Medical Programs, Comprehensive Health Planning activities, and more recently, the State Health Coordinating Councils and Health Systems Agencies have increasingly sought to obtain information on the availability of and the need to augment those who participate in the provision of preventive and restorative health care. Frequently, the studies of health manpower, which were undertaken by these governmental agencies, professional societies, and other organizations, were hazy snap shots of what was at that point in time or, more likely, was a backward glance at what had been rather than studies which should have been undertaken utilizing a dynamic approach that would allow for the examination of trends, a fine tuning of methodologies employed, and the opportunity to attempt simulations of what changes might take place if the intervening variables were changed.

Researchers seldom have had the opportunity to test the validity of the data available to them for examination. Seldom have they had the luxury of having a stability in funding or personnel which has allowed for the longitudinal examination of carefully gathered statistics for one or more professions. Methodologies utilized and data available have been so inconsistent that it is frustrating to those who might attempt the comparision of the results of a series of studies or the aggregation of data utilized by researchers in two or more localities within a given region or state.

A variety of problems are encountered when many publics apply their own interpretation to a study. In one instance with which this author is aware, eight separate institutions used the same study which indicated a demand for personnel to justify the establishment of a given allied health program. It can readily be seen that if each of these had been successful in their efforts, an over supply could quickly have been created, individuals would have been educated with no realistic hope of employment in that locality, and an overnight increase in demand for scarce faculty resources, and thus, lead to the potential utilization of less than qualified individuals to educate the health manpower. These and other less than desirable results could and have occurred from instances where results of research efforts have been utilized without the benefit of a comprehensive plan for the region or state.

Methodologies. A series of studies undertaken in different areas with a state (Health Service Areas) which used different methodologies may not be used to accurately provide an aggregate picture of the supply and/or the demand for health manpower in a single or multiple state area. The same methodology should be used consistently across the state in each Health Service Area. A second methodology might be employed, if time and resources allow, to valididate the findings of the first. Even a statewide examination of the distribution of manpower should use a single, carefully spelled out procedure. For example, all areas should consistently count, as manpower resources within their area, those who indicate their principal employment setting as within the Health Service Area for which the study is being undertaken. If one Health Systems Agency were to look at the residence of the personnel and a second Health Systems Agency were to examine the principal place of employment, it is easy to see that a single invidual could be counted twice, thus, exaggerating the number of personnel available. As indicated earlier, the methodologies employed should be acceptable to all those individuals, agencies, institutions, and organizations who will be the principal users of the findings of any analysis. This will reduce the dollars and time spent in undertaking what may be unnecessarily duplicative surveys and research efforts and, at the same, increase the liklihood that the information secured will be utilized by each of the parties responsible for resource allocation, education of personnel, and the provision of health care services.

Limitations. Although definitions of health manpower categories do exist in such documents as the American Society of Allied Health Profession's "Glossary of Occupational Titles", no broadly accepted definitions exist for the complete list of health providers. When attempts are undertaken to examine categories of unlicensed allied health manpower, researchers frequently must resort to relying on employers to determine the number and type of health manpower personnel within each geographic area. Frequently, such studies combine individuals with a variety of educational backgrounds into single categories, such as "medical laboratory personnel". It is impossible to learn from such surveys the number of clinical laboratory assistants, medical laboratory technicians, medical technologists, histologists, and the like.

A second major difficulty facing those who would examine the numbers of and demand for allied health manpower is that seldom more than seventy percent of these personnel are employed by acute or extended care facilities. Others are employed by individual physicians working in free standing clinics or, as in the case of individuals such as audiologists and speech pathologists, are employed in individual, independent practice settings. Even the aggregate of those in each of the previously mentioned settings accounts only for those who are employed. Also, surveys of these personnel frequently fail to determine whether employment is full- or part-time. Additionally, it is almost impossible to determine the numbers of educated but not employed individuals in these categories. Further, it is difficult, if not totally impossible, to determine the proportion of these "educated but not employed individuals" who would enter the work force if financial or other inducements were presented.

Data Availability. Until the initiation of a national effort by the National Center for Health Statistics, the data collected on licensed health professional was frequently not available in a form which would allow national comparative studies. In 1973, with the initiative of a series of so called "minimum data set" activities by the National Center for Helath Statistics, cooperating states began to collect at least a minimum set of specified data on licensed health professionals. Following the advice of advisory groups called "Producers and Users Task Forces", The "minimum data sets" were augmented to meet the special needs of participating states. As of 1976, a total of twenty-one states were participating in the manpower component of the "minimum data set" activities. Each of these data collection efforts are tied to the licensure cycles.

It is expected that these activities will be continued. From this effort, researchers concerned with health care and health manpower education will be able to undertake both longitudinal studies and studies which compare the availability of selected health manpower in various geographic settings.

A second component of the "minimum data set" activity includes the gathering of information from licensed health facilities. Since no uniformly, acceptable definitions of most of the personnel in these health facilities have been created, it is impossible to tell from information currently gathered the services provided by these personnel or their level of educational attainment.

Training Programs: Supply, Quality, And Articulation

Depending upon the category of health personnel being considered, the principal educational setting may be the health facility, a vocational-technical center, a two-year institution of higher education, a college, or comprehensive university. The quality of the educational experience provided will depend upon many factors, including the education and skills of faculty and the availability of modern equipment. The clinical materials in sufficient quantity to provide the necessary breadth and depth in the clinical education experience phase also has to be considered.

Considerations associated with articulation must, out of necessity, examine both the traditional use of the word articulation as it relates to moving from one level of training to another and secondly, the extent to which a well-developed coordination exists between the clinical and didactic phases of the educational experience.

Program Distribution

Those examining the availability of personnel to provide health services must consider both the proximity of the educational program to the population to be served and the nature of the educational program in each setting.

Geographic Distribution. Many factors affect the geographic distribution of programs. Tradition and the conservative or liberal nature of the community may come into play in determining whether a physician assistant or a nurse practitioner program is established in a given community. Similarly, during the first years of existence of a given health manpower category, it is frequently the case that educational programs are concentrated in the section of the nation where the initial program was developed.

A quick examination of the location of educational programs indicates that the greater number of years of education required to obtain entry level skills for a profession, the greater the likelihood that such a program will be located in an academic health center or comprehensive university, and thus, be located in a major urban setting. With the rapid growth of the community college concept during the sixties and seventies, there has been an associated rapid growth in the number of health-related programs in institutions of higher education in relatively small communities. Even for those programs which are located in community colleges, there is a tendency to have the educational programs for health personnel concentrated in selected community colleges which are located in urban areas. Federal initiatives, including the Area Health Education Centers, are attempting to bring about a redistribution of personnel by expanding educational opportunities in rural and inner-city settings.

Traditionally, the free-standing, health-related educational programs which have existed in health facilities were those which were designed to provide on-the-job training for the personnel for that specific facility. Thus, at one time, such programs could be found in almost every locality where a sizeable health facility existed. While many of the larger health-care personnel, financial extengencies and other considerations are, in many instances, forcing two or more clinical facilities to cooperatively participate in the education of such personnel, or as is more frequently the case, encourage a local community college to provide much of or all of the training.

Educational Type. Those involved in statewide planning are often faced with the situation where a given type of educational program may exist in several schools of close proximity in one remote section of the state. Yet, such programs are nonexistent in many locals where there would be a significant problem when such programs are located in two-year institutions of higher education. Students from these programs have a history of less mobility than graduates of baccalaureate and graduate degree institutions. When such concentrations exist and where the remote areas have been saturated, the discontinuance or cutback in these programs must be in consideration. Ideally, a mechanism should be developed which would allow for the mobility of the program from one section of the state to another. This becomes very difficult though when it could require the movement of people and extensive equipment.

Program Determinants

Individuals in institutions of higher education, health facilities, statewide higher education coordinating agencies, and state health planning agencies must look at a variety of factors when determining whether or not to initiate or continue a program to educate health personnel. Among these considerations are student demand, graduates needed, faculty and facility availability, resource availability, program cost, and the availability of funding.

Student Demand, Enrollment, And Graduates

When attempting to determine whether or not a program should be initiated, those responsible for program development should determine the extent of student interest in participating in the program, both in the initial year and over an extended period of time. This information will assist in determining whether or not specialized faculty and high costs are required for the program and if it is a wise investment for an institution to make. This becomes particularly crucial in certain instances. For example, it is known that graduates of two-year institutional programs tend to remain in the region within which they received their post-secondary education. If the employment opportunities are limited in such communities, student demand for programs will be reduced significantly once the local employment market is saturated.

Individual institution and statewide aggregate data on program enrollment and graduates becomes a useful tool for the institutional and statewide planner. This information can be used to help predict both current and and future availability of health manpower. Thus, if a quick examination reveals that the number of graduates from a given profession have tripled within a given state within a five-year period of time, the supply of health personnel in that category will increase more rapidly in coming years than if the total graduates, in the years one through five, had remained constant.

Faculty Availability. Very little is known about the availability of qualified, experienced faculty for allied health disciplines. The apparent lack of such individuals in these disciplines, such as nurse anesthesiology and physician assistant training programs, have created a market place where these and other faculty in great demand find they can be very selective in their choice of geographic location and choice of educational institution. Studies designed to determine the availability of such faculty resources will help to identify disciplines for which intensive faculty training programs should be undertaken.

Facilities and Equipment. Frequently, individuals supporting the development of programs undertake the initiation of backing a program effort without an institutional commitment to provide the requisite equipment and/or facilities. The faculty and even administrators of an institution might approve a dental hygiene program, but without the availability of the needed chairs and related equipment, the program initiative is doomed. Those involved in program development and planning would serve substantially better if a typical cost of program start could be determined. These estimates should use a zero-based budgeting technique. Institutions could then modify the cost estimates giving their own analyses of the availability of needed equipment and facilities. Such a list of equipment and costs could also provide a tool for intelligent decision making. Given the priorities of the costs associated with a program in a specific discipline and the increments which could be expected for programs of various sizes, the institution(s) involved could then determine what is or is not available to them, and projected resources could be found to develop and maintain the proposed program activity.

Clinical Resources. Agencies responsible for statewide coordination of higher education are in hopes that institutions proposing new academic programs in health-related professions have secured signed, clinical agreements which would provide assurance that sufficient, clinical material would be available to complete that phase of the educational program. One important clinically related consideration is the extent to which the academic institution has demonstrated that a plan has been developed to coordinate the didactic and clinical portions of the educational experience. The distance of the proposed clinical setting(s) from the academic institution are particularly crucial in an integrated curriculum where both didactic and clinical aspects of a program are occuring during a quarter or semester.

Each state, and the institutions of higher education within its boundaries, would profit by having easy access to a frequently updated directory which would identify the clinical facilities available for various types of health-related programs, institutions of higher education cooperating with each of these facilities, the number of students who could appropriately use these clinical resources, the number of students from each institution of higher education using these facilities, and the time periods during which each of these various groups of students were making use of the identified clinical resource. Such a directory would aid institutions of higher education and coordinating agencies in determining added given the availability of clinical resources with any reasonable commuting distance of each institution of higher education. Many clinical facility administrators and higher education faculty and administrators know all too well two stories which would count as instances where institution(s) of higher education in an area had initiated a health-related, academic program, had students complete significant portions of the campus based segment of their training, only to find that they had anticipated clinical resources not available in sufficient quantity to allow all of the students to complete their academic program. It is appropriate to underscore this concern by saying that in the best interest of students, clinical facilities, and institutions of higher education alike, no academic program should be initiated nor major change in the size of the program should be undertaken until appropriate clinical agreements are concluded which identify the expectations of each party, including the number of students who will be utilizing the facility, the hours of use, arrangement for instruction and supervision, and specifying the mechanism which will coordinate their didactic and clinical phases of the educational program.

Funding. Institutions proposing to initiate or expand academic offerings in the health sciences should, for the protection of their students and faculty, be prepared to demonstrate how the program would be funded over an extended period of time. This is equally critical when the institution is initially funded through some external funding authority, such as the federal government or a foundation.

Measures Of Success

Program quality is difficult to identify. To measure the success of a program, many faculty and administrators monitor the ability of their graduates to pass licensure or registry examinations and their graduates ability to find employment in the "most desirable" employment settings.

Licensure or Registry Examinations. The passing or failure rate of such examinations gives faculty and administrators a measure of the success of the students from their programs. An institution which repeatedly has twenty, thirty, or forty percent of their students failing these examinations, may find it necessary to reexamine criteria used in the selection of students, the content of the curriculum, and other related factors. A statewide or national profile of how graduates from each school perform on registry or licensure examinations provides the institution of higher education with an indication of the relative success of their students. Obviously, it is unnecessary and inappropriate to let institutions know the identity of the institutions on the list other than themselves. Many licensure boards and national organizations are willing to provide this service.

Employability. Employers of graduates of health-related programs are frequently willing to talk with faculty and adminsitrators about their perceptions of the skills which new graduates bring to their place of personal employment. A detailed study of the observations by immediate supervisors working with the graduates can prove a useful tool for those who wish to examine the extent to which their educational programs are providing the students with the skills expected by employers.

Articulation

A compendium of information an articulation agreements would serve as a useful resource for health educators at all levels whether they be employed by health facilities, two-year institutions, or four-year institutions of higher education. In addition to a study of the nature and extent of articulation agreements, a useful resource for those involved in the education of health manpower would be an extended bibliography on the studies and related material which would have included the examination of articulation and related transfer agreements.

Career Mobility - Lateral and Horizontal. Education beyond the basic level of training is essential to those professionals who wish to assume leadership roles as faculty researchers or administrators. For some, this means participation in a baccalaureate degree program. In other instances, it means graduate education. Movement from one educational level to another is particularly difficult for those who have graduated from two-year institutions of higher education which grant students in health-related programs an associate degree in applied science. Fortunately, the leveling of college enrollments, state legislation calling for cooperation among institutions of higher education, and other factors have led to increased cooperative planning among institutions.

Shared Institutional Resources. Scarce resource pressures from clinical facilities, state health planning agencies, and statewide coordinating bodies for higher education have led institutions, in some areas of the country to begin looking at ways which they can collectively best meet the needs for the education of health manpower in their respective regions. In a specific instance, the institutions in Health Service Area V (Eastern Virginia) have joined forces to see how they can, either individually or collectively, best respond to the health manpower educational needs of that area. This collection of institutions includes health facilities, two- and four-year institutions, and an emerging academic health center. Over a period of one year, these institutions have determined ways in which they can strengthen their programs and provide better service to the community by jointly hiring specialized faculty, share clinical resources, jointly award degrees, and cooperate in the development of programs which will enable qualified students to easily move from one educational level of another.

Financing Educational Programs

Issues associated with the financing of health-related educational programs differ depending upon whether the principal focus of the program is in the institution(s) of higher education or the health facility(s). Because of the high relative cost of such programs, administrators in both these settings must look to external sources for substantial portions of the funding required.

Issues For Higher Education

Public institutions for higher education across the nation are largely funded on the basis of one of three mechanisms. They are as follows: (1) zero-based budgeting, (2) formula budgeting, or (3) some form of a program budgeting system. Whichever method is used, all agree that the cost for health-related education is relatively high, and that there is a need for stability in funding. Many institutions are concerned with the restrictions which the state and federal governments have placed on some funds earmarked for the education of health professionals.

High Relative Costs. Most agree that when the total dollars expended for the education of students are considered, health-related programs are the most expensive undertaken by institutions of higher education. It is, however, obvious that costs vary greatly from discipline. Also, the net cost to institutions of higher education may be, in many instances, significantly reduced because of the availability of funds from the federal government, foundations, and contributed resources by clinical facilities.

Stability of Funding. Institutions of higher education require stable sources of funding. Otherwise, they could find themselves with programs initiated, equipment purchased, building under construction, and expensive tenure faculty on their payrolls, but with radically, punctuating external support. When an institution, public or private, decides to carry an academic program with funds provided by the federal government or a private foundation, it should be prepared to assume responsibility of the funding for the program upon conclusion of the projected grant. Otherwise, as was the case with the many educational programs associated with the Comprehensive Planning "C" programs, the program will disappear as soon as the external funds are removed. Institutions, whenever possible, should plan to gradually assume the expenses associated with the program over the full life of a grant or contract. Increasingly, the coordinating agencies who work with public institutions of higher education are asking those institutions who wish to initiate health-related programs to demonstrate their willingness and ability to fund from internally generated revenues the programs they propose.

Restrictions On Funding. Restrictions which all for an institution to gradually assume responsibility for funding an activity are generally constructive in so far as they may promote long-range planning and insure financial stability for the program activity. Restrictions which require the enlargement of the existing program or the addition of new program components may have a negative impact on planning. In some instances, the requirement of enlarging the size of a program as a requirement to receive specified funds may lead to the surplus of manpower in a given region. Likewise, the restriction which calls for a specific institution to add an additional program element discourages the cooperation of other institutions in the same region of the state which might more appropriately become the home for all or a part of the required new program element.

Faculty And Equipment Expense. Due to the requirements of crediting and licensure bodies, many health-related programs require a faculty/student ratio, at least in the clinical phase of the program, which may be substantially richer than that in other programs within the same institution. In order to support the requests for the disapportionate faculty and equipment costs which are encountered, it would be useful for statewide coordinating agencies of higher education, as well as deans and administrators, to have access to data elements which would present the faculty/student ratios of similar programs in various categories of institutions (i.e., public and private, two- and four-year institutions of higher education and academic health centers) within selected regions of the country. Likewise, typical zero-based, start-up costs for equipment of a specific program area would also prove a useful planning tool.

Issues For Health Facilities

As the number of private insurers and federal programs have increased during the past decade, more funds have been made available for health-care services and, to a limited extent, resources for the education of those who must provide those services. These added programs have also brought with them emphasis on costs containment and, increasingly, require costs justification. One of the most controversial issues relates to the extent to which patients should be charged for the education of health-care personnel. As these pressures increase and as health facility administrators find more and more institutions of higher education seeking to use their clinical facilities, the question of who will pay for this clinical education is raised with increasing frequency.

Role Of Third-Party Payers. As health costs rise and regulation increases, those in regulatory organizations and health facilities are attempting to differentiate between costs associated with health patient-care and those which are strictly educational costs.

Cost-Benefit Analysis. Large health-care facilities frequently have items in their budgets related to health-care education which exceed a million dollars. When concerned, administrators have examined the extent to which individuals participating in the educational programs within their facilities provide patient-care services; they also take into consideration the benefits which accrue to them by participating in educational programs that help to assure that the graduates of these facility-based programs will be better qualified to immediately provide expected services upon employment. Many have found that the net cost, at the conclusion of a cost benefit analysis, to be insignificant. Such was the case in a study undertaken at Hartford Hospital in Connecticut during 1972-1973. Other studies of this type should be undertaken in health facilities in various regions of the country. These would be useful for all involved in the education of health personnel and for the provision of monies to pay for the cost of such educational programs.

THE DEVELOPMENT OF POLICY FOR ALLIED HEALTH SCHOOLS

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Introduction And Background

The problems and issues related to data needs for policy making should be considered within the context of some type of a model or complex. What confounds our policy making posture is the attempt to treat the allied health professions outside the context of all the health professions. The allied health professions are, in fact, a sub-set of the set of persons who comprise the health professions. The interrelationships are real and apparent.

With respect to the use of a model or complex, the health professions and the sub-set known as the the allied health professions are an essential component of a medical care complex. The complex has three major components: (1) people needing health services, (2) organized arrangements for performing medical care functions, and (3) people providing health services. (ASPHA, 1969)

The health professions constitute component three. The point to all this is to emphasize that the three described components of the medical care complex are in a state of interaction and, therefore, each component or its subcomponents must be considered in its relationship to the other. This complex is also bounded, and the boundaries so established are determined by the goals, values, and expectations brought to the complex by its components.

At the boundaries of the complex, the influence of public policy considerations may be viewed. For instance, the 1942 Beveridge Report markedly affected the British medical care complex and all its components by establishing specific public policy postures. In this nation, were we to establish a public policy position to the effect that all medical care would be without direct cost to the patient at the time of delivery, the influence would be marked on our health manpower pool at least with respect to the volume and mix of health personnel.

The focus, then, within the context of this three component bound system is to identify data needs or, if you will, research needs for policy making related to the Allied Health Professions. Policy making, as we know, is based on identified needs, and the knowledge of these needs by decision makers and others are vital to the eventual support which may or may not be forthcoming for the development of decisions by these policy makers. The method will be to pose questions to which we need answers. The answers to these questions will guide us, hopefully, in the development of policy positions.

The presentation will be in four parts:

- Manpower Supply and Distribution
- Training Programs: Supply, Quality, and Articulation
- Financing Educational Programs
- The Role Of The Health Care Team

Manpower Supply And Distribution

In introducing this section, the volume of persons in the health manpower market will be examined. The persons in the health manpower market, defined by the National Center for Health Statistics of the Department of Health, Education, and Welfare, are those persons who have received some training for the jobs which they hold in the health care delivery system. (Health Resources Statistics, 1976)

1974 is the most recent year for which data are available, and we note that 4.7 million people are, in fact, employed in the health labor manpower market. The distribution of these persons by type and class varies markedly. For example, the types of persons classified as MODVOPP, that is medicine, optometry, dentistry, veterinary medicine, osteopathy, pharmacy, and podiatry include some 629,000 individuals. This group of individuals comprises approximately 13.4 percent of the 4.7 million persons in the market. Nurses are the next largest group. There are 857,000 licensed nurses. Nurses, therefore, are approximately 18.2 percent of the health manpower market. Together the MODVOPP and the nurses represent some 31.6 percent of the health manpower market.

The remainder or approximately 70 percent of all health workers are neither MODVOPP or nurses but generally speaking are allied health personnel. The significance of this volume of people is spoken to later with respect to public policy equity questions regarding the allocation of resources, particularly at the federal level to health manpower issues. The other significant consideration in dealing with this conglomeration of allied health personnel is the fact that we are not dealing with seven or eight professional organizations as with MODVOPP's and nurses, but with a wide variety of professional groups and organizations which do not have an integrated approach to legislation or to, in fact, analyzing themselves as the largest group of workers. This has, of course, tremendous policy implications for the kinds of things that this 70 percent of our labor market can and will do for itself.

Number and Profile of Allied Health Professionals

The distribution of the health manpower market by field of endeavor discloses that approximately 70 percent are persons who could be classified as allied health. The preparation of these persons ranges from on-the-job training to degrees at the doctoral and occasionally post-doctoral levels.

A researchable issue would be to determine precisely the type of institution wherein these people are trained and the amount of effort, economic and otherwise, consumed in their training.

Only partial descriptive data are available. For example, a research issue is the financial burden on our health care delivery institutions, not only regarding the people who are on-the-job trained, but who are trained in residencies, internships, and in various kinds of clinical training situations which are a component of most all allied health programs. These economic and policy questions are of prime consideration for use in developing policy statements and in a resolution of policy concerns regarding the manpower supply and distribution and the determination of the valume of individuals who are thus trained.

Professionals In Demand

We have fairly current data on the estimated number of persons employed in selected health occupations (Health Resources Statistics, 1976). The more interesting observation than numbers alone is the *demand* for, *need* for, and the *supply* of allied health personnel at a point in time. A group of authorities in medical manpower analysis pose related questions. What is the gap (if any) between estimated requirements and estimated supplies? What actions, if any, does a gap suggest? (Lave, Lave and Leinhardt, 1974) These same authors note that the concepts of need and demand are "quite different and often confused." Their definitions and meanings are fundamental to understanding and examining the so-called demand question. A populations *need* for medical services may be defined as that quality of medical services which expert medical opinion believes ought to be consumed over a relevant time period in order for its members to remain or become as "healthy" as is permitted by existing medical knowledge. A population's *wants for medical services* may be defined as "that quantity of medical services which its members feel they ought to consume. *Demand* is defined as the "multivariate functional relationships between the quantities of medical services that its members desire to consume over a relevant time period at given levels of price of goods and services, financial resources, size, and psychological wants of the population as reflected by consumer tastes and preferences for "all goods and services". (Lave, et al, 1974, Wilson, 1974)

There is no attempt within the paper to deal with the differences, real or otherwise, in the concepts of need, wants, and demand. The point here is that research into the issues surrounding analysis of "demand" for allied health manpower must take into cognizance that considerable confusion and ambiguity exists regarding precise definitions and usage of the noted terms and concepts.

Further, the literature abounds in studies of the need and demand for physicians, nurses, dentists, and most of the earlier described MODVOPP and nurse categories. One must pursue the literature in some detail to locate studies regarding the need and demand for allied health personnel. Most studies of allied health personnel deal with their ability to extend the functions of the MODVOPP group. (Waterman, 1952; Riddick et al,1971)

Years of Service Rendered Over Life Span

We have no studies at hand to indicate "probable productivity" of all health professionals. The net-effective numbers of individuals in the health manpower market has been studied with respect to nurses and physicians. Some of these date indicate that approximately 50 percent of all registered nurses, that is, nurse licentiates, are active in the labor market at a given time and this has been offered as a challenge to develop programs to prepare these individuals for re-entry into active professional roles. The net-effective number of physicians in the health manpower market is relatively higher than for nurses, at least on an intuitive basis. That is, physicians as a group, more than likely, have less discontinuity in their professional service than do nurses. Again, at the intuitive level, the societally conditioned social role of the nurse, a predominately female group, dictates discontinuity in her professional service for events attendant on child-rearing, child care, and the like.

Using these two groups as examples, we need studies of the net-effective availability of a variety of types of allied health personnel. Discontinuities in service should be studied by type of personnel, geographic region of the nation, and all available demographic characteristics, particularly sex and age. Based on the findings, further studies may be conducted to determine the reasons for discontinuities in active service. Remedial programs may then be developed or re-entry programs inaugurated and evaluated.

Maldistribution in Type and Employment Location

Maldistribution is based on some notion of a desired distribution. That is, how do we measure the distribution and employment location of allied health personnel in order to decide that some standard has or has not been met. Simply stated, no generally accepted standards exist other than relative standards. For instance, the number of physicians per 100,000 civilians in each state in the year 1957 varied from approximately 280 in the District of Columbia to just over 60 in South Dakota (Somers and Sams, 1961). The reasons for this "maldistribution" are multiple and are based on such factors as income, living conditions, number of hospitals, styles of living, and a host of factors.

Research should be done on regional differences apparent in the mix and type of allied health personnel. The research would, in part, address the question of why we have regional differences. We need descriptive studies and following the descriptive studies, we need analytical studies to determine the reasons for this.

Career Mobility and Attrition

Career mobility is one of the major challenges to the field of allied health. Nurses are the classical example. As we know, traditionally, nurses have been prepared in three types of institutions: (1) the hospital prepared nurse or the diploma nurse; (2) the associate degree nurse prepared usually in a community college; and, (3) the nurse prepared in colleges and universities at the bachelor of science level. This variability in the preparational patterns has been a concern of all those interested in the health manpower market and certainly has been an ongoing concern of the organized nursing profession. A Kellogg Foundation funded project (Cabin, Traber, Bulloush, 1976) in the Long Beach-Orange County, California area holds the promise of articulation and career mobility patterns worked out to the extent that a nurse's aide theoretically would be able to move through a career pattern with a minimum of redundancies and become a licensed vocational nurse, then an associate degree nurse, and then a bachelor of science in nursing. This pattern is probably unique to the country, but it should be observed as an outstanding example of interinstitutional coordination and cooperation with the professional groups concerned. The development of similar patterns in the allied health professions is a challenge.

Another variation is the study sponsored by the University of North Carolina, Department of Community Colleges, in the transfer of credit recommendations of the North Carolina articulation project (Boatman and Huther, 1974). More action studies of this type are in order to look to the question of transfer of credit, reduction in course work redundancies when an individual wishes to move within a field vertically or laterally.

Training Programs

Maldistribution of Programs and Schools

The inventory developed by the American Society of the Allied Health Professions noted significant variation by DHEW Region in the distribution of training programs. (ASAHP, 1976) The effect of programs and schools on the geographic distribution of personnel must be studied. The distribution of training sites to some population base is required. Obviously, there have been some influences which have an effect on the geographical distribution of training programs and this should be a subject of research.

Variation in Entry Requirements

A study of medical school applicants from the University of California, Berkeley, (Rovnanek, 1974) in the early 1970's concluded, among other findings, that graduates from the University of California, Berkeley, were rejected at a higher rate when applying to medical schools in other states than were graduates of these other states despite the fact that the Berkeley graduates were better prepared as measured by performance on the medical college admission test, grade point average, and degrees earned. In other words, there was discrimination against graduates of that University if for no other reason than state residents are given higher priority over non residents. Research is needed to describe such events for groups of allied health personnel.

Medical technologists are prepared variously, even within one state. For example, in the State of California, within the nineteen campus system of the Californai State University and Colleges, some of the medical technology preparation programs are integrated into a four year curriculum. In others, we have a four year plus one year sequence. The one year is the clinical year wherein a student must find his own placement. In other words, in some instances, we supervise the entire preparation of people who would be medical technologists. In other instances, we do not supervise the entire educational sequence which prepares the individual to take his state examination. The field of dietetics has a similar problem.

Curricular Standards

Research is needed on the question of variability in curricular standards within given professions. Other questions are these: Do accrediting bodies influence the quality of the curriculum positively? What are the influences of certifying groups or licensure boards on raising the standards of preparation? These are all unknowns. Academics themselves are, of course, quite reluctant to move ahead simply because they lack the specific motivation or the conceptual tools to research the questions.

Quality of Instruction

Quality of instruction, of course, relates to the questions previously raised regarding curricular standards. Not only do we not know whether or not we are having quality instruction, the conceptual and operational tools we have seem to be elemental.

Another area of concern is the means of assessing the quality of clinical instruction. Much of clinical instruction is self-standardized; that is, at a certain point in time, a person working in a laboratory can either perform a certain type of procedure to a certain standard or he cannot. Clinical instruction centers about perfornace. In the learning situation, most clinical instruction is one-for-one with the instructor and the student working together. The feedback loops are necessarily short. This, as we know, is a quite effective means to education but it is certainly not very efficient in terms of productivity because of the one-to-one relationship. So if we are to examine the quality of instruction, we are going to have to develop conceptual tools and motivation in people to apply these tools.

Articulation

In post secondary education, proprietary schools should be included for at least in some of our states these institutions are a significant factor in production of manpower.Other institutions which do not normally all fall under the purview of local educational administrative authorities such as Regional Occupational Programs and Regional Occupational Centers.

Some research needs center about discovering the amount and degree of effective career laddering. This is largely an unplumbed domain. State manpower commissions and health manpower planning commissions are emerging factors in education. We have boards of higher education and other administrative organizations look to questions concerning the preparation at the postsecondary level. Quite a few states are now moving into health manpower planning such as California, New Jersey, Pennsylvania, Connecticut, and some of the other states are in the planning phase for such activities.

California has a statewide Articulation Conference. This conference was established back in the mid 1920's for the purpose of ensuring that secondary school graduates took course work which articulated with courses at the University of California. In other words, the University of California wanted to insure that high school students and other preparatory-level students were actually taking courses which would articulate with the University courses. Over the years there have developed a large number of advisory committees to the California Articulation Conference such as in engineering, nursing, and the like. The Allied Health Liaison Committee to the Articulation Conference is in its third year and because of the Health Manpower Education Project sponsored by the Health Resources Administration of the Public Health Service, impetus has been given to the Allied Health Liaison Committee. A thrust of this Liaison Committee is to advise the Articulation Conference of the ways and means by which articulation concepts and agreements can be employed within the state.

Accreditation Standards

Accreditation standards were established initially to insure high standards of preparation (National Commission on Accrediting, 1972).. The process of self study within the academic setting is an essential of the accreditation process. Agreements, problems, issues, and concerns are identified at that time. There are those who suggest that the accrediting body serves the purpose of helping us in the academic community to raise standards by interpreting to our administrators the kinds of resources we need to meet the accreditation standards. In other words, the accrediting body seeks the allocation of sufficient resources to produce the quality of graduates acceptable to them. In the immediate future, some of the questions of the influence of accrediting bodies on accrediting standards must be described and measured.

Lack of Core Curriculum

A notion common to the allied health field is that specific learning experiences are held in common. The studies that have been done out of the Ohio State University in the recent past gives direction to that notion. (Journal ofAllied Health, 1973) Unfortunately the application of the concept of core curriculum is not widespread. More investigations should be done to describe the influence of extent and degree of the use of core curriculum. Further, the effectiveness of the core curriculum should be determined. Other research questions have to do with the position of accrediting bodies on the concept of core curriculum. Will licensing bodies, will certification groups, and others determine whether or not individuals are being properly prepared? Will they be willing to set aside some of their "sacred cows" so that we can proceed with the development of common learning experiences--the core curriculum? Have accrediting groups been invited to participate in model studies regarding the development of core curriculum? Ready cooperation is at hand.

Financing Educational Programs

The National Academy of Sciences, through its Institute of Medicine reported out a study in 1974 of the costs of education in the health professions. The study has been examined by a number of groups including the Association of American Medical Colleges and the American Society of the Allied Health Professions. The concern with the financing of education programs is more crucial as we approach a "steady state" in American higher education. In actuality, little is known regarding the financing of most allied health programs except for the studies noted.

Equity of Federal Financing

An earlier question focused on the equity of the distribution of federal level resources for health manpower training. We must also recollect that health manpower legislation, at least at the national level, is just over a decade old having begun in 1963. Some modification of direction has taken place but not to the extent and degree that some of us would wish. When examining this issue of equity, we must also remember that traditionally health workers were conceived to be donating their time in hospitals. Workers were expected to receive less pay than that in the rest of the labor market in that they were dealing with sick people. Other establishments of our society have held the same posture. For example, insurance companies at one time furnished free lunches and some medical services to their employees under the concept that it was their responsibility to furnish some food and to give medical care to their employees rather than to pay them the kind of salary in which they could take care of their own needs. Banking institutions, until recent years, have held to somewhat similar practices.

The question of equity in the allocation of federal financing of health manpower training should be explored from a public policy viewpoint, and suitable remedy applied. In fiscal year 1976, the U.S. Department of Health, Education and Welfare awarded $381.6 million for health manpower training. The number of federal agencies involved in health manpower training and their varying accounting and reporting practices presents a problem in determination of spending totals for health manpower. The largest single federal source is the Department of Health, Education and Welfare. Health Manpower Report for September 1, 1976, cited an official release from DHEW that the department had awarded $381 million in fiscal year 1976 to train doctors, dentists, nurses, and other health professionals. The $381 million excludes such federal agencies involved in health manpower training as the U.S. Veterans Administration, Department of Labor, and others.

According to the report cited, the MODVOPP's who constitute 13.4 percent of the health manpower market received $251 million of the $381.6 health manpower funds awarded. This is 66 percent of the total. Actually, when the funds awarded to public health, area health education centers, and Manpower Initiative Awards are factored in with a large physician component, the MODVOPP's received something approaching 77 percent of the $381.6 million, yet constitute 13.4 percent of the manpower market.

Nursing constitutes 18.2 percent of the health manpower market, but received $6.1 million or 16 percent of the funds awarded. When one considers that registered nurses constitute the single largest health profession in terms of numbers and factoring in a share of the public health, AHEC, and Manpower Initiative Awards dollars, nursing may be receiving a proportion of the award equal to or slightly exceeding their proportion of the manpower market.

Allied health professionals who constitute approximately 68.4 percent of the manpower market received 7.4 percent of the funds awarded.

The inequities here are obvious and apparent. Detailed analysis must be performed and public policy and legislative postures enacted.

Social and Political Considerations

There are also social and political considerations which should form the basis for behavioral science research if not economic and public policy research. For example, seldom would you hear an individual say that a medical technologist had saved their life. People simply do not respond to or have knowledge of the variety and types and kinds of people who support those who give hands-on care. Most people would be quite interested in explaining how their doctor saved their life or how their nurse ministered to them but most of them are unaware of the support systems offered by the persons who are called allied health personnel.

State Support

The notions here are about the same as at the national level. Data are lacking on the distribution of state dollars for the support of allied health training. Studies should be made to pursue the equity question noted earlier as regards state level support.

Private Support

Little is known about private support for the allied health professions but an analysis of the contribution of foundations and regional and local foundations should give some idea of the amount and kind of support from the private sector of the economy.

Costs of Education

Earlier on we mentioned the financing of educational institutions for the health professions and those remarks should be relevant at this point in time. There also must be a recognition of the cost, direct and indirect, of clinical education.

The Role of the Health Care Team

One of the greatest problems in patient care is placing the patients' need for care with the most appropriate provider of care at the proper sequence in the illness episodes of the patient. This concept may be called "the right patient in the right bed with the right services at the right time." An expert in the field in addressing this subject in 1964, noted the above.(Haldeman, 1964) What was stated in 1964 is even more relevant today. As our medical technology base expands, we have more types and more kinds of services and personnel to match with patients' needs. The underlying concept here is that we are reaching a more complex interaction among the members of the health care team and yet the research into the called-for matching process is at minimum.

Functional Relationships with Other Professionals

These functional relationships with other health care professionals begin in the academic preparation period and should continue through the professional lifetime of the individual.

The amount of research at hand and the data needs which are called for are less well defined. A recent proposal (Tumelty, 1976) for a Health Manpower Education Initiative Award had these objectives for interdisciplinary training:

- that overall case management is a shared process which occurs between and among health professionals;
- that in the course of case management, and often within a critically short time-span, a variety of health professionals may be "the most important" for the patient;
- that leadership in case management may be shared between and among health professionals;
- that health care professionals learn from one another their roles in case management;
- that definite benefits in patient care may accrue within health care de-

livery practice forms alternative to solo practice wherein these alternative forms, ready-referral and interdisciplinary conference may be more likely to occur;

- that with respect to the health personnel shortage area of location of the training facilities, the care personnel will be introduced to the influence of cross-culture factors in patient care management.

These and other researchable concerns should be pursued by groups in health science centers to include a wide variety of allied health personnel.

Recognition of Competence and Need

I suggest there is a general agreement that other team members contribute to patient care, but the degree of this acceptance varies. Some of the research interests here are the questions which were raised earlier under functional relationships but we should also be aware of changes in attitudes and practices that support the interdisciplinary approach and support the acceptance of people, all people, of the ministrations of allied health professional who constitutes some 70 percent of the total health manpower labor force.

Conclusions

The so-called allied health personnel constitute almost 70 percent of the health manpower labor market, yet receive markedly less fiscal support from federal and perhaps state and private sources. Studies of health care professionals tend to focus on selected members of the health care teams such as physicians, dentists, and nurses and less so on the allied health professions which constitute the bulk of the manpower.

The allied health professional, although a highly integrated member of the health care team, does not share in the psychological rewards of patient acceptance and veneration, except in rare instances. Numbers alone as contrasted with the other health team members would accord a higher status position for the allied health worker than is actually observed.

The majority of investigations at the biomedical and health sciences research level bypass the allied health profession. Data needs for policy making related to the allied health profession have been stated in this paper.

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